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# ABSTRACT BOOK

## 14th Georg Rajka International Symposium on Atopic Dermatitis

## Doha, Qatar

## October 24–26, 2024

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# Abstracts from 14th Georg Rajka International Symposium on Atopic Dermatitis

Doha, Qatar

October 24–26, 2024

## Contents of this Abstract Book



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# Welcome Address from ISAD 2024 General Chair

It is with great pleasure and privilege to welcome you to the '14th Georg Rajka Symposium on Atopic Dermatitis' in Doha, Qatar — October 24~26, 2024. This year we chose the theme 'Global Perspectives on Atopic Dermatitis: Uniting for a better Care', and we are very pleased and proud that we are able to welcome world-renowned basic scientists and clinicians covering all aspects of atopic dermatitis, many of them pioneers in their field. Since Atopic Dermatitis is a global, frequent disease, we also sought to invite experts from WHO and all around the world to discuss how we can improve patient's quality of life by providing and uniting for better treatments for all patients. One of the main subjects of this meeting will be the debilitating symptom of "pruritus (itching)", its pathophysiology, assessment and treatment, because of its novel treatments, a very hot topic in dermatology and neuroimmunology. Here, we will explore where the future of Atopic Dermatitis therapy will go. The City of Doha is the capital of the State of Qatar and represents all the beauty and hospitality of the Arabian peninsula. Despite the astonishing natural and quite beauty of the desert, Qatar is a growing industrial modern country which attracts many tourists and families, as well as industry and universities. The venue of the meeting, the Sheraton hotel is located in the heart of the beautiful center of Doha, close to museums, cafes and beaches, which invite to relax during a pleasant Arabic winter enjoying culture and nature alike. For the first time in the Middle East, we have assembled an exciting program for scientists, clinicians, residents, students and industry partners alike, that will cover all aspects of Atopic Dermatitis research. Please join us for a special program in which you can experience in the best way possible, Arabic hospitality and make new friends. We are looking forward to welcoming you to Doha.

*Prof. Martin STEINHOFF MD, PhD, M.Sc., FRCPI*
*ISAD 2024 General Chair*
*Chairman, Dept. of Dermatology and Venereology*
*Director, Translational Research Institute*
*Hamad Medical Corporation, Qatar*
*Professor, Weill Cornell Medicine, Qatar and New York, USA*
*Clinical Professor, Qatar University*
*Professor, Hamad Bin Khalifa University*
*Doha, Qatar*

# ISAD: Setting Atopic Dermatitis in a Global Health Perspective

Atopic Dermatitis is being revolutionized by the availability of several new drugs in clinical practice since the last few years, and with a large pipeline of new products in development. This change is welcome, since AD is considered as the main gateway to allergy and that climate changes are prone to change our exposome to allergens and pollutants, increasing the risk of allergies[1]. However, in a global health context, AD is now paradigmatic for health inequalities in dermatology worldwide, with the introduction of high-cost biologics and innovative small molecules prioritized in high-income settings but with limited to no access elsewhere. In such a global perspective, the new framework program of the World Health Organization (WHO), which focuses its action on low resource settings, now considers prevalent non-communicable skin diseases, such as AD, as part of its strategy for skin health at the primary care level. According to the Global Burden of Disease (GBD) consortium, at least 171 million individuals were affected with AD in 2019, corresponding to 2.23% of the world population, with age-standardized prevalence and incidence rates that were relatively stable from 1990 to 2019. Most AD cases are mild-to- moderate. Without parallel data on disease prevalence and severity, the GBD data are difficult to interpret in many regions. The ISAD organized a roundtable at the 2023 Singapore WCD to compare experiences in World Bank category 1 (Madagascar and Mali), 3 (Brazil, China) and 4 (Australia, Germany, Qatar, USA, Singapore, Japan) countries concerning organization of care and access to drugs for AD[2]. Regional specificities at the global level for AD show a very large heterogeneity both between and within countries according to the organization of care. Primary/secondary and tertiary care is modulated by the number of specialists (dermatology, pediatrics and allergy) the national and individual insurance system and the weight of traditional or alternative medicines. Current AD guidelines are not adapted for low resource settings and a more pragmatic approach, as developed by WHO for skin NTDs, would be advisable for minimal access to moisturizers and topical corticosteroids. ISAD recommends also prioritizing prevention studies, regardless of the level of existing resources. For disease long-term control in World Bank category 3 and most category 4 countries, the main problem is not access to drugs for most mild-to- moderate cases, but rather poor compliance due to insufficient time at visits. Collaboration with WHO, patient advocacy groups and industry may promote global change, improve capacity training and fight current inequalities. Finally, optimizing management of AD and its comorbidities needs more action at the primary care level, because reaching specialist care is merely aspirational in most settings. Primary care empowerment with store and forward telemedicine and algorithms based on augmented intelligence is a future goal. Our meetings have become annual and hybrid since 2021 to reflect the rapid advances of our field and its global outlook. The Doha 13th Rajka symposium, organized by Martin Steinhoff and his team is held under the motto "Global Perspectives on Atopic Dermatitis: Uniting for a better Care", which is perfectly in line with the current philosophy of ISAD.

Enjoy the meeting!

*Alain TAÏEB*
*President ISAD*

1: Traidl-Hoffmann C et al. Navigating the evolving landscape of atopic dermatitis: Challenges and future opportunities: The 4th Davos declaration. Allergy. 2024 Aug 4. doi: 10.1111/all.16247. Epub ahead of print. PMID: 39099205.

2: Faye O et al. Atopic dermatitis: A global health perspective. J Eur Acad Dermatol Venereol. 2024 May;38(5):801-811. doi: 10.1111/jdv.19723. Epub 2023 Dec 27. PMID: 38151270.

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## Thursday, October 24, 2024 — Uniting For Better Care

| Time (UTC+3/AST) | Program | Speaker | |
|---|---|---|---|
| | **Welcome addresses** | | |
| 13:00–13:30 UTC 10:00–10:30 | Welcome to Doha | *Martin STEINHOFF* | |
| | Welcome | *Rayana BOU HAKA (WHO)* | |
| | ISAD President address | *Alain TAÏEB* | |
| | Introduction into History of ISAD and Rajka meetings | *Johannes RING* | |
| | Welcome | *Suzanne RAJKA* | |
| **13:30–14:15** UTC 10:20–11:00 | **Session 1** | **Conference Keynote Lecture** *Chairs: Martin STEINHOFF* | |
| 13:30 | Keynote lecture: Pruritus research: Present and future | *Mark HOON (NIH)* | KL1 |
| **14:15–15:45** UTC 11:00–12:30 | **Session 2** | **Pathophysiology of Atopic Dermatitis – Barrier and Epidermis** *Chairs: Alan IRVINE, Ameen ALAWADHI, John C. SU* | |
| 14:15 | Keynote lecture: New aspects in the role of the epidermis in skin biology | *Sabine WERNER* | KL2 |
| 14:45 | The neuropeptide Endothelin-1 drives skin barrier disruption | *Rari LEO* | OL2 |
| 15:00 | Stratum corneum Interleukin-2 in eczema at 1-month-old predicts later atopic dermatitis | *Eriko MAEHARA* | OL3 |
| 15:15 | Dupilumab treatment provides sustained improvement in skin barrier composition and function in patients aged 6 to 11 years with moderate-to-severe atopic dermatitis | *Annie ZHANG* | OL4 |
| **15:30–16:15** UTC 12:30–13:15 | **Poster Session 1 – Visit Exhibits and Coffee Break** | | |
| **16:15–17:15** UTC 13:15–14:15 | **Session 3** | **Innate Immunity dysregulation** *Chairs: Georges NEMER, Aysha AL-MALKI* | |
| 16:15 | Cytokine based circuits and innate immunity in atopic dermatitis | *Kenji KABASHIMA* | KL3 |
| 16:45 | Methotrexate and ciclosporin improve skin biomarkers in childhood atopic dermatitis: Results from the TREAT trial | *Helen ALEXANDER* | OL5 |
| 17:00 | Changes in oral microbiome of atopic dermatitis (AD) patients treated with dupilumab or upadacitinib | *Gabriela ŻUK* | OL6 |

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|---|---|---|---|
| **17:15–18:20** UTC 13:15–15:20 | **Session 4** — **What's new from the industry** *Chairs: Mohammed AL OTAIBI, Peter SCHMID-GRENDELMEIER, Delphine STAUMONT-SALLE* | | |
| 17:15 | What's new for abrocitinib - summary of key evidence for M2S atopic dermatitis | *Erman GÜLER for Pfizer* | WL1 |
| 17:35 | In search of the Holy Grail in Atopic Dermatitis: Is dupilumab the first disease-modifying atopic dermatitis drug? | *Ana ROSSI for Sanofi* | WL2 |
| 17:50 | Advancing patient care in immune-mediated skin diseases: The past, present and future of JAK inhibition | *Mark KIRCHHOF for AbbVie* | WL3 |
| 18:05 | IL-13: Role in pathophysiology of atopic dermatitis and how to master the driver of inflammation | *Thomas BIEBER for Eli Lilly* | WL4 |
| **19:30–20:30** | **Welcome reception** | **Sheraton Hotel Garden** | |

## Friday, October 25, 2024 — Mechanisms and fundamental aspects of AD

| Time (UTC+1/CEST) | Program | Speaker | |
|---|---|---|---|
| **08:30–09:30** UTC 05:30–06:30 | **Session 5** — **Primary Prevention and Comorbidities** *Chairs: Peter SCHMID-GRENDELMEIER, Fatima Ahmed ALBREIKI, Lin MA* | | |
| 08:30 | Keynote lecture: Does atopic dermatitis cause food allergy and what can we do about it? | *Carsten FLOHR* | KL4 |
| 09:00 | The PREGRALL multicenter randomized control trial | *Sébastien BARBAROT* | OL7 |
| 09:15 | SERPINB7 mutations in hereditary palmoplantar keratosis and atopic dermatitis | *Shan WANG* | OL8 |
| **09:30–10:00** UTC 06:30–07:00 | **Poster Session 2 – Visit Exhibits and Coffee Break** | | |
| **10:00–11:30** UTC 07:00–08:30 | **Session 6** — **Adaptive Immunity dysregulation** *Chairs: Thomas BIEBER, Yousef BINAMER, Fareed AHMAD* | | |
| 10:00 | Keynote lecture: New molecular and cellular players in the immunopathogenesis of AD | *Georg STINGL* | KL5 |
| 10:30 | The critical function of a peripheral-induced specific skin-resident treg cells in allergen-specific immunotherapy for atopic dermatitis | *Kelun ZHANG* | OL9 |
| 10:45 | JAK1 inhibitor improves skin barrier function and associated proteomics in atopic dermatitis: A controlled real-world study | *Fang WANG* | OL10 |
| 11:00 | Atopic dermatitis: Untangling the autoimmunity novel insights in the era of targeted immunotherapy | *Husham Yousuf BAYAZED* | OL11 |
| **12:00–13:00** | **Lunch and Visit Exhibits** | | |
| **13:00–15:15** UTC 10:00–12:15 | **Session 7** — **Pruritus and AD** *Chairs: Fang WANG, Muna AL MURRAWI, Joerg BUDDENKOTTE* | | |
| 13:00 | Neuroimmune circuits of pruritus in AD and therapeutic consequences | *Martin STEINHOFF* | IL4 |
| 13:30 | JAK-inhibitors for treatment of pruritus and prurigo | *Brian KIM* | KL6 |
| 14:00 | Nemolizumab was associated with rapid and significant improvements in itch and sleep in patients with moderate-to-severe atopic dermatitis: Results from two global phase 3 pivotal studies (ARCADIA 1 and ARCADIA 2) | *Andreas WOLLENBERG* | OL12 |
| 14:15 | Efficacy and safety of upadacitinib in adolescents with moderate-to-severe AD versus dupilumab | *Chih-Ho HONG* | OL13 |
| 14:30 | Atopic dermatitis in ethiopians: The role of rare FLG2 and NOD2 variants | *Isabel TAPIA* | OL14 |
| 14:45 | Improvement in sleep and quality of life with abrocitinib versus dupilumab in patients with moderate-to-severe atopic dermatitis and severe itch: A pooled analysis of 2 randomized trials | *Erman GÜLER* | OL15 |
| 15:00 | Dupilumab treatment provides sustained, consistent improvements of signs and symptoms over 1 year in pediatric patients with moderate-to-severe atopic dermatitis | *Carsten FLOHR* | OL16 |
| **15:15–16:00** UTC 12:15–13:00 | **Poster Session 3 – Visit Exhibits and Coffee Break** | | |
| **16:30–17:30** UTC 13:30–14:30 | **Session 8** — **Quality of Life & Comorbidities, Epidemiology** *Chairs: Johannes RING, Mariam AL NESF, Haya AL-MANNAI* | | |
| 16:00 | AD - a stress disorder? The psychodermatological aspect! | *Uwe GIELER* | KL7 |
| 16:30 | Readibility of patient electronic materials for atopic dermatitis, itch and prurigo: Is it of importance for patients' well-being? | *Jacek SZEPIETOWSKI* | IL5 |
| 16:45 | Atopic dermatitis and prurigo nodularis in the State of Qatar: Retrospective study from 2015-2023 on epidemiology, associated comorbidities, and Clinical Practice Guidelines (CPG) from Hamad Medical Corporation | *Mohammed N. AL-ABDULLA* | OL17 |
| 17:00 | Prurigo Nodularis: From disease comorbidities to new therapeutics | *Shawn KWATRA* | KL8 |
| 17:30 | Multimorbidity in adults with atopic dermatitis in a population-based cohort | *Leon A. MILTNER* | OL18 |
| 17:45 | Hand eczema or atopic hand eczema: A single center, prospective study on clinical features, etiology, and diagnosis in China | *Yifeng GUO* | OL19 |

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| **19:30–23:00** | **Local Organizing Committee Cultural invitation Dinner *(Katara Opera): Qatar Symphonic Orchestra***<br>**President's dinner *(Marsa Katara): Presentation of Rajka Medal & ILDS award*** |

## Saturday, October 26, 2024 — Global aspects and modern treatment of AD

| Time (UTC+1/CEST) | Program | Speaker | |
|---|---|---|---|
| **09:00–10:35**<br>UTC 06:00–07:35 | **Session 9** — **New Technologies and AD**<br>*Chairs: Magdalena TRZECIAK, Roberto TAKAOKA, Ayda AL-HAMMADI Fareed AHMAD* | | |
| 09:00 | Climate change and AD | *Claudia TRAIDL-HOFFMANN* | KL9 |
| 09:30 | Methods and devices to assess pruritus in AD | *Akihiko IKOMA* | IL6 |
| 09:50 | Skin pathology assessment with optical technologies (spot): Leveraging optical biomarkers for sub-clinical atopic dermatitis severity monitoring | *Robert BYERS* | OL20 |
| 10:05 | Shotgun metagenomics reveals microbiome dysbiosis in dupilumab-associated head and neck dermatitis | *Wanjin KIM* | OL21 |
| 10:20 | The feasibility of using the Emerald Touchless Sensor for nighttime scratching and sleep quantification | *Annie ZHANG* | OL22 |
| **10:35–11:05**<br>UTC 07:35–08:05 | **Poster Session 4 – Visit Exhibits and Coffee Break** | | |
| **11:05–12:35**<br>UTC 08:05–09:35 | **Session 10** — **Topical therapies for AD: New advances**<br>*Chairs: Andreas WOLLENBERG, Dirk J. HIJNEN, Ousmane FAYE* | | |
| 11:05 | Disease modification in atopic dermatitis: Fiction or soon reality? | *Thomas BIEBER* | KL10 |
| 11:35 | Endotypes and phenotypes of atopic dermatitis | *Thomas WERFEL* | KL11 |
| 11:50 | General practitioners knowledge about use of topical steroids in atopic dermatitis | *Fandresena A. SENDRASOA* | OL23 |
| 12:05 | Topical steroid withdrawal in atopic dermatitis: Patient-reported characterisation from a swedish social media questionnaire | *Mikael ALSTERHOLM* | OL24 |
| 12:20 | Phage Therapy | *Yousef DASHTI* | OL25 |
| **12:35–13:35** | **Lunch and Visit Exhibits** | | |
| **10:00–11:30**<br>UTC 07:00–08:30 | **Session 11** — **New Targeted and Systemic Therapies for AD**<br>*Chairs: Kyu-Han KIM, Medhat ASKAR, Mirjam SCHENK* | | |
| 13:35 | Biologics in AD: An update | *Wei LI* | KL12 |
| 14:05 | HADS anxiety and depression scores improved in Japanese patients with moderate-to-severe atopic dermatitis following lebrikizumab treatment: 68-week results from a randomized, double-blind, placebo-controlled Phase 3 trial (ADhere-J) | *Martin DOSSENBACH* | OL26 |
| 14:20 | *Title unknown at the time of publication* | *Andreas WOLLENBERG* | IL7 |
| 14:40 | A novel antimicrobial peptide catestatin modulates skin barrier and immune responses in AD | *Ge PENG* | OL27 |
| 15:55 | Dupilumab injection intervals in adult atopic dermatitis patients: Experiences in korean patients | *Jong Hee LEE* | OL28 |
| 15:10 | JAK-inhibitors for treatment of AD | *Kilian EYERICH* | IL8 |
| **15:30–16:10**<br>UTC 12:30–13:10 | **Poster Session 5 – Visit Exhibits and Coffee Break** | | |
| **16:10–17:55**<br>UTC 13:10–14:55 | **Session 12** — **Future treatments of AD**<br>*Chairs: Alain TAÏEB, Kenji KABASHIMA, Sara AL-KHAWAGA AHMAD* | | |
| 16:10 | Future therapy of AD: A precision medicine perspective | *Emma GUTTMAN-YASSKY* | KL13 |
| 16:40 | Efficacy of combined topical pimecrolimus, antibiotics, and topical ivermectin therapy for rosacea in 39 patients among 315 receiving dupixent: A detailed analysis | *Kim HYUN JUNG* | OL29 |
| 16:55 | Combined dupilumab and allergen-specific immunotherapy in severe refractory atopic dermatitis | *Jemin KIM* | OL30 |
| 17:10 | Development of an emulgel for the effective treatment of atopic dermatitis in children and adults: Biocompatibility and clinical investigation | *Almudena GÓMEZ-FARTO* | OL31 |
| 17:25 | Dupilumab efficacy and safety up to 2 years in children aged 6 months to 5 years with AD | *John C. SU* | OL32 |
| 17:40 | *Title unknown at the time of publication* | *Diamant THACI* | IL9 |
| **17:55** | **Closing Ceremony** | | |
| 17:55 | Closing remarks | *Alain TAÏEB & Martin STEINHOFF* | |
| 18:05 | Next Rajka Symposium: Melbourne, Australia | *John C. SU* | |

# KEYNOTE LECTURE ABSTRACTS (KL)

## *KL.1*
## PRURITUS RESEARCH: PRESENT AND FUTURE

*Mark HOON*
*NIH/NIDCR, Bethesda, USA*

Atopic dermatitis is a skin disease which are associated with chronic itch. It is known, predominantly through disruption of the dermal barrier, that the immune system contributes to this disease. Another contributor to the itch-symptoms is the peripheral nervous system and its downstream circuits. Over the last two decades the understanding of the molecular mechanisms of itch detection and signaling by primary sensors has seen dramatic advances. In addition, many of the key central neural pathways which convert pruriceptive signals at the skin into itch sensation have been elucidated. The contribution of the neurotransmitter BNP (Nppb) to itch-signaling as well as roles of Nppb-neurons and other primary pruriceptors will be described in this presentation. Emphasis will be placed on how these cells function in basal conditions and how functions change in chronic itch conditions. The potential for Nppb as a therapeutic target for treatment of itch will be highlighted. Lastly, the interactions between itch and immune cells in the dermal layer will be discussed with a view to potential new research areas and treatment opportunities.

## *KL.2*
## NEW ASPECTS IN THE ROLE OF THE EPIDERMIS IN SKIN BIOLOGY

*Luca FERRARESE, Michael KOCH, Liliana LOPES, Daria WÜST, Sabine WERNER*
*Institute of Molecular Health Sciences, ETH Zurich, Zurich, Switzerland*

There is emerging evidence for a key role of keratinocytes in the control of skin inflammation. On the one hand, an intact epidermal barrier is required for skin homeostasis and prevention of inflammatory responses and on the other hand, keratinocytes directly secrete growth factors and cytokines that control immune cells. We previously showed that fibroblast growth factor receptor (FGFRR) deficiency in mouse keratinocytes causes an inflammatory skin phenotype with similarities to atopic dermatitis, but the human relevance is unclear. Therefore, we generated human keratinocytes with a CRISPR/Cas9-induced knockout of FGFR2. Loss of this receptor promoted the expression of interferon-stimulated genes and pro-inflammatory cytokines under homeostatic conditions and in response to different inflammatory mediators. Expression of FGFR2 itself was strongly down-regulated in cultured keratinocytes exposed to various proinflammatory stimuli. This is relevant in vivo, because bioinformatics analysis of bulk and single-cell RNA-seq data showed strongly reduced expression of FGFR2 in lesional skin of atopic dermatitis patients, which aggravates the inflammatory phenotype. These results reveal a key function of FGFR2 in human keratinocytes in the suppression of inflammation and suggest a role of FGFR2 down-regulation in the pathogenesis of atopic dermatitis and possibly other inflammatory diseases.

## *KL.3*
## CYTOKINE BASED CIRCUITS AND INNATE IMMUNITY IN ATOPIC DERMATITIS

*Kenji KABASHIMA*
*Department of Dermatology, University Graduate School of Medicine, Kyoto, Japan*

Atopic dermatitis (AD) is a chronic inflammatory skin disease characterized by a complex interaction of immune responses. Dysregulated cytokine circuits involving innate and adaptive immunity are central to AD's pathogenesis. The compromised skin barrier allows for the penetration of allergens and microbes, prompting keratinocytes to release key cytokines such as IL-33 and thymic stromal lymphopoietin (TSLP). These cytokines activate innate lymphoid cells (ILC2s), dendritic cells, and mast cells, amplifying a Th2-dominant immune response. IL-4, IL-5, and IL-13 are major cytokines driving this response, leading to inflammation, pruritus, and tissue remodeling. IL-31, a central mediator of itch in AD, acts directly on sensory neurons to promote pruritus. In addition to Th2 responses, mast cells, and eosinophils are pivotal in sustaining chronic inflammation by releasing histamine, cytokines, and cytotoxic granules. Dysbiosis, particularly the overgrowth of Staphylococcus aureus, further exacerbates AD by triggering immune responses via superantigens, worsening inflammation and skin barrier disruption. Therapeutic advances targeting these cytokine circuits have revolutionized AD treatment. Dupilumab, an anti-IL-4Rα monoclonal antibody, effectively reduces Th2-mediated inflammation. Other biologics, such as nemolizumab (anti-IL-31R), also promise to control pruritus. However, AD's heterogeneity requires ongoing research into cytokine pathways to tailor more effective, personalized treatments for patients.

## *KL.4*
## DOES ATOPIC DERMATITIS CAUSE FOOD ALLERGY AND WHAT CAN WE DO ABOUT IT?

*Carsten FLOHR*
*Dermatology and Population Health Science, St John's Institute of Dermatology, King's College London, UK*

In this lecture I will review the latest evidence on the association between atopic dermatitis and food allergy both from observational and interventional studies, making a strong case for transcutaneous sensitisation to food allergens in early life. This has important public health implications. Both emollient application in infants with dry skin and atopic dermatitis and baby massage are likely to be implicated. Simple measures, like meticulous hand hygiene prior to applying emollients or baby massage oil, may be effective as a preventative measure as we show in the EU Horizon 2020 Joint Program Initiative TRANSFOODS consortium, where we have also demonstrated that massaging mice with a peanut allergen-containing preparation can induce peanut-specific sensitisation. In addition, the early oral introduction of allergenic foods plays an important role in food allergy prevention, as this induces tolerance.

## *KL.5*
## NEW MOLECULAR AND CELLULAR PLAYERS IN THE IMMUNOPATHOGENESIS OF AD

*Georg STINGL*
*Department of Dermatology and Venereology, Medical University of Vienna*

Prevailing opinion holds that Th2 and Th22 cells are the major T cell subsets lesional AD skin, but their exact pathogenic roles in the emergence and rpetuation of the disease have not been fully clarified. the more recent past, attention has focused on two specialized lymphocyte bsets operative in this regard. th normal and AD skin contain a population of innate lymphoid cells type 2 LC2s). They express neither T nor B cell receptors but are sensing danger gnals via pattern recognition receptors. In the case of AD, they are responsive epidermal alarmins (e.g., IL-25, IL-33, TSLP) as evidenced by the increased oduction of IL-13 which, in turn, initiates a Th2-inducer program in dendritic lls. 2 cells thus generated consist of both allergen-specific and bystander Th2 cells. idence now exists that the former subset, termed Th2A cells, exhibits CD3+, CD4+, HPGDS+ CRTH2+,

CD161hi, ST2hi, CD49dhi, and CD27lo phenotype d can be detected in post-treatment, non-lesional AD skin. th ILC2s and Th2A cells are promising targets in the treatment of AD.

### *KL.6*
### JAK-INHIBITORS FOR TREATMENT OF PRURITUS AND PRURIGO

Brian KIM
*New York, USA*

Sensory neuronal JAK1 signaling is a critical mediator of atopic dermatitis (AD)-associated itch. Indeed, there are currently 3 FDA-approved JAK1-selective or -targeting inhibitors demonstrating uniquely rapid improvement of itch in AD. Further, proof-of-concept studies are demonstrating the capacity of JAK1-selective inhibitors to suppress itch beyond AD and in conditions such as chronic pruritus of unknown origin (CPUO) and prurigo nodularis (PN). Herein, we demonstrate how JAK1-selective inhibitors likely derive their broad anti-pruritic efficacy across the therapeutic landscape.

### *KL.7*
### AD - A STRESS DISORDER? THE PSYCHODERMATOLOGICAL ASPECT!

Uwe GIELER[1,2], Tanja GIELER[3]
*[1]Vitos Clinic for Psychosomatics, Giessen, [2]Psychodermatology University Dermatology Clinic Pour, [3]University Children's Hospital, Child and Adolescent Psychosomatics, Giessen*

Atopic dermatitis, stress and psychosocial comorbidities: Atopic dermatitis is very often associated with stress and mothers of children with atopic dermatitis often ask themselves whether they are to blame for this disease, since the disease is chronic and there are no therapies that clearly relieve symptoms. The helplessness and fear of the next attack, coupled with a multitude of treatment suggestions from a wide variety of perspectives, at least worsen the way the disease is dealt with and contribute to a significantly reduced quality of life. Psychosocial comorbidities have now been proven in many studies and the number of atopic dermatitis patients with depression can be estimated at around 25%. Atopic Dermatitis and stress: Epidemiological surveys show the connection with stress quite clearly. A meta-analysis showed a positive connection between stress and atopic dermatitis in most studies. In natural stress reactions such as an earthquake, people with atopic dermatitis react significantly more frequently with an exacerbation of their atopic dermatitis than those without this stress reaction. The key question is how emotional stress can ultimately lead to skin inflammation and influence immunological processes. Studies with standardized stress models in mice and occasionally in humans have shown that there is a change in the activity of certain neuropeptides and neuromodulators. Atopic dermatitis and Patient Empowerment: If psychosocial factors play an important role in atopic dermatitis, the question immediately arises as to the extent to which psychotherapeutic treatments can effectively influence the symptoms and disease processing of atopic dermatitis. In a systematic Cochran review came to the conclusion that there are now enough randomized studies on the use of training programs for atopic dermatitis, especially in childhood and adolescents, so that these two programs have now found their way into practically all guidelines for the treatment of atopic dermatitis and are recommended as basic therapy.

### *KL.8*
### PRURIGO NODULARIS: FROM DISEASE COMORBIDITIES TO NEW THERAPEUTICS

Shawn KWATRA
*Dermatology, University of Maryland School of Medicine, Baltimore, USA*

Abstract summary not available at the time of printing

### *KL.9*
### CLIMATE CHANGE AND AD

Claudia TRAIDL-HOFFMANN[1,2]
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Diseases such as bronchial asthma, allergic rhinoconjunctivitis and atopic dermatitis have increased significantly in recent years, especially in western industrialized countries. Between 10-40% of the world's population is affected by allergic rhinitis due to seasonal pollen exposure - due to environmental and other factors, this percentage varies between cities, countries and continents, and can also be over 40%. Climate change affects the range of factors to which we are exposed and has caused a variation in the production by plants and fungi of the proteins that are ultimately responsible for allergy. In the case of pollen allergies, it has been seen that climate change is producing a worsening of the disease, either due to a greater amount of pollen, greater protein expression or pollutants that eventually act in collaboration with the development of the pathology. Changes in climate seem to have altered the pollen spatial distribution. New patterns of atmospheric circulation over Europe may contribute to incidents of long distance transport of allergenic pollen, increasing the risk of new sensitizations in the allergic population. In addition, most allergen-specific immunoglobulin E (IgE)-mediated food allergies in adults follow previous sensitisation to aeroallergens. In a context of climate change (Nadeau et al., 2021), with impacts on natural ecosystems and crops, the incidence of allergenic pollen is subject to variations that can be drastic and have a considerable impact on the health of the population. Allergic diseases are the consequence of complex interactions between genetic and environmental factors. Among these factors, the timing and form of exposure to sensitizing agents are substantially essential in determining the prevalence of allergic diseases due to pollen. The extent of exposure depends on the atmospheric concentration, its allergenicity and the duration of the pollen season. These variables are closely related to the local climate. Therefore, climatic variations can be expected to lead to changes in pollen load and in the prevalence of sensitisation. There is still great uncertainty about the rates of climate change to be expected, but it is clear that changes, such as extremes of temperature and precipitation, will increasingly manifest themselves in important and tangible ways. Extreme weather events, such as drought or severe precipitation, wind gusts, thunderstorms and increased long distance pollen transport events represent new challenges in this scenario. In a changing world working towards optimal health management, it is crucial to take rapid action to counteract the health problems arising from these new conditions. Above all, more emphasis needs to be placed on environmental research, developing modern, automatic and real-time services to provide effective guidelines for allergy prevention in the future. Urban planning and greening should also pay attention to use of plants with low allergy risk. Interdisciplinary and cross-sectoral cooperation is essential.

### *KL.10*
### DISEASE MODIFICATION IN ATOPIC DERMATITIS: FICTION OR SOON REALITY?

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Recent advance in understanding the mechanisms underlying atopic dermatitis (AD) lead to significant efforts in drug discovery programs 1 to reach increased therapeutic efficacy in this highly heterogeneous and pathophysiologically complex

chronic inflammatory skin disorder. This progress now allows to envisage pushing the therapeutic boundaries beyond the simple symptomatic treatment of the exacerbations of AD and considering new therapeutic strategies aimed to allow a deep remission, i.e. disease modification. However, the concept of disease modification has not yet been considered for drug development in AD and its associated atopic comorbidities. To reach the goal of disease modification in AD and potentially in the atopic march, a number of key issues needs to be addressed such as (i) a consensual definition of disease modification in AD and its comorbidities, (ii) the identification of potential windows of opportunity for therapeutic intervention, (iii) the definition of an AD disease activity index (ADDAI), (iv) the identification and validation of biomarkers for the patient stratification and as surrogates for successful intervention, (v) the definition of clinical endpoints as well as (vi) the design of appropriate studies to allow for the regulatory claim of disease modification. The currently available and the extending pipeline of drugs in development for the therapy of AD and allergic disorders provides the unique opportunity to elaborate the concept of disease modification in chronic inflammatory skin diseases such as AD.

## *KL.11*
## ENDOTYPES AND PHENOTYPES OF AD

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Due to the heterogeneity of AD, it is unlikely that all AD patients will respond equally to a particular treatment. Various phenotypic factors of the patients such as age, existing comorbidities, location (e.g. head and neck dermatitis) or severity of eczema influence the choice of a treatment for AD. The introduction of newer targeted therapies for AD has increased the need for further patient stratification based on clinical phenotypes and biomarkers (endotypes). A future goal will be to move from the current 'one-drug-fits-all' concept to a personalized 'patient-endotype-specific' treatment. In recent years, more attention has therefore been paid to the heterogeneity of AD and, in this context, also to the ethnic background of patients. It is now clear that the Th2 hyperactivation in AD is a common feature across all ethnic groups. There is, however, some evidence that the Asian endotype of AD is further characterized by increased Th17-mediated signals, while African Americans have a strong Th2/Th22 signature in skin and no Th1/Th17 polarization. For application in studies and clinical practice, the development of biomarkers that can serve as surrogate markers for an endotype is important for predicting response to a particular therapy. Recently, CCL22 expression in lesional skin was identified as the best biomarker to predict clinical improvement in several AD therapies. In addition, baseline levels of the Th17 cell-associated chemokine CXCL2 were predictive for treatment with dupilumab. Other published biomarkers for a good response to targeted treatments for AD include high IL-22 expression for anti-IL-22 treatment with fezakinumab and high serum concentrations of the IL-13-associated molecules dipeptidyl peptidase-4 (DPP4) and periostin for treatment with the anti-IL-13 antibody tralokinumab. Patients from the German AD registry were categorized into eosinophilic and non-eosinophilic endotypes. Here, the proportion of AD patients who responded particularly well to dupilumab was higher in the 'non-eosinophilic' endotype (32% vs. 11% EASI-90 after 3 months of treatment and 63% vs. 25% IGA 0/1 after 6 months of treatment). Taken together, these data show that taking into account ethnicity, clinical phenotypes and certain inflammatory molecules can potentially lead to more differentiated treatment decisions for AD. However, the published results are not yet specific enough to be implemented directly into clinical routine.

## *KL.12*
## BIOLOGICS IN AD: AN UPDATE

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Atopic dermatitis (AD) is a complex and heterogeneous skin disease characterized by Th2-dominant inflammation with differential contribution of Th22-, Th17-, or Th1-type cells and molecules, which results from interactions among environmental factors, barrier function, and immune system. Elegant efficacy of Th2-targeting biologics, e.g. dupilumab, confirms the key role of Th2 pathway in the pathogenesis of AD; whereas there are still substantial number of patients can't achieve IGA 0/1, indicating the heterogeneous nature of AD. Many biologics targeting various inflammatory mediators have also been developed, which demonstrate variable efficacy for AD. In general, biologics against molecules related with Th2 cell differentiation/activation, e.g. IL-4R, IL-13, IL-31, OX40, and OX40L, show favorable efficacy; whereas biologics against upstream cytokines produced by keratinocytes, e.g. TSLP, IL-33, IL-17C, and IL-36, fail to show significant improvement, and the strategies targeting downstream cells of Th2 pathway including eosinophils or mast cells using anti-IL-5 or anti-IgE also have no effect on AD. Significant changes in the skin lesion and peripheral blood have been identified after biologics treatment, and several biomarkers are selected for prediction of the efficacy. At the same time, people are trying to figure out the heterogeneity of AD inflammation. Elderly AD patients have increased proportion of Th17-type inflammation, which is consistent with decreased response rate to dupilumab in this population. Lesions in the face and neck demonstrate suboptimal efficacy upon dupilumab treatment and are easier to relapse, and an enrichment of Th17-type inflammation has been revealed in the face/neck of AD patients compared to the legs, which might be due to sebum that induces IL-17 production, or OPN3-mediated production of IL-36 in keratinocytes upon sun exposer. In summary, biologics have greatly advanced the treatment for AD and our understanding on the pathogenesis, whereas the heterogeneities of AD demand more personalized targeting strategies.

## *KL.13*
## FUTURE THERAPY OF AD: A PRECISION MEDICINE PERSPECTIVE

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Atopic dermatitis (AD) is is currently undergoing a therapeutic revolution. Our increased understanding of the underlying immunologic and barrier dysregulations and disease heterogeneity across its spectrum is facilitating hypothesis-driven therapeutic development. Early transcriptomic analyses in AD skin and blood have identified disease-specific biomarkers and uncovered immune and barrier abnormalities that may contribute to disease pathogenesis. From these findings, various therapeutic targets were then proposed and investigated in clinical trials, leading to the FDA approval of several biologics and small molecule drugs that are now widely used in the clinical setting. Molecular phenotyping of patient samples before and after treatment has further elucidated the specific immunomodulatory effect of each therapeutic, as well as the relative contributions of various immune pathways to disease pathogenesis. This bench-to-bedside cyclical approach has rapidly broadened our understanding of AD and enabled the rapid expansion of the AD therapeutic pipeline. We will discuss currently approved and potential therapeutics for AD resulting from this bench-to-bedside approach, and highlight how this translational approach is being applied to advancing the therapeutic pipeline of AA.

# INVITED LECTURE ABSTRACTS (IL)

## *IL.2*
## ISAD: SETTING ATOPIC DERMATITIS IN A GLOBAL HEALTH PERSPECTIVE

*Alain TAÏEB*
*President ISAD*

Cf. page 2.

## *IL.3*
## INTRODUCTION INTO HISTORY OF ISAD AND RAJKA MEETINGS

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*Professor emeritus, Dermatologie und Allergologie; TUM School of Medicin, Munich, Germany*

50 years ago atopic dermatitis (AD) was not regarded a major subject of interest within the large spectrum of dermatology and venereology. Only single individuals took this disease as focus of their research and clinical activities, one of them was Prof George Rajka in Oslo, Norway. In 1975 he wrote the first book on AD and from then on he started to gather interested people from all over the world and invited them to Norway to a series of symposia only devoted to AD, starting in Oslo in 1979 over Loen 1984, Oslo 1998, Bergen 1991 until 1994 in Lillehammer. Most of participants were young researchers presenting own data, orally or with posters; there were no or only little big lectures, the essence was open and critical discussion which continued into the evening hours and social events. Of some symposia the proceedings were published as supplement in the Acta DermatoVenerologica, among them the citation classic of Hanifin and Rajka for diagnosis of AD. Also the European Task Force Atopic Dermatitis (ETFAD) and the severity scoring tool SCORAD were conceived in Norway. When Georg Rajka stepped down, his friends thaught that it was absolutely necessary to continue this tradition; the first meeting was organized together with him by Kristian Thesdrup-Pedersen and Johannes Ring in Aarhus in 1996. From then on the symposia were named "Georg Rajka Symposia" - the 1st in Davos 1999 - in order to keep the spirit of free exchange of ideas from the early meetings. The symposia went around the world with Portland 2001, Rome 2003, Arcachon 2005, Kyoto 2008, Munich 2010, Moshi 2012, Nottingham 2014, Sao Paulo 2016, Utrecht 2018, Seoul 2021 (virtual), Gdansk 2023 until Doha 2024, changing from 2 y intervals to yearly meetings. In Moshi the idea came up to institutionalize the activity and found an International Society of Atopic Dermatitis ISAD, which took place in Verona; the mission is to "advance excellence in clinical care, research, education and training in the field of atopic dermatitis and related diseases", as major activity to organize an international symposium in regular intervals to foster international cooperation.

## *IL.4*
## NEUROIMMUNE CIRCUITS OF PRURITUS IN AD AND THERAPEUTIC CONSEQUENCES

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Abstract summary not available at the time of printing

## *IL.5*
## READIBILITY OF PATIENT ELECTRONIC MATERIALS FOR ATOPIC DERMATITIS, ITCH AND PRURIGO: IS IT OF IMPORTANCE FOR PATIENTS' WELL-BEING?

*Jacek C. SZEPIETOWSKI*
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Atopic dermatitis (AD) is a common inflammatory pruritic skin disease with complex pathophysiology and clinical presentation. AD has a great impact on quality of life (QoL). Chronic itch is the most common subjective symptom in AD and is regarded as a the most bothersome one. Some AD patients due to chronic itch and long-term scratching develop prurigo lesions. It has already been shown that patients are utilizing the Internet to gain knowledge about their medical concerns and treatment options, underscored the accessibility, user-friendly interface, and low cost of online health information. The Internet is widely recognized as a trustworthy source of health information. Individuals utilize online resources to enhance their own understanding and expand their expertise. With a pipeline of new therapeutic options understanding of the complexity of AD, itch and prurigo by the patients is crucial also for their well-being. Recently, we have performed studies on readability of patient educational materials in Internet with well accepted Lix score. The overall mean Lix score for AD was 56 ± 8, which classified articles as very hard to comprehend. Significant differences in mean Lix scores were observed across all included European languages. Articles released by non-profit organizations and pharmaceutical companies had the highest readability. Similar findings were documented for itch and prurigo. It is of note that prurigo had lower readability compared to information about the itch itself. In conclusion, although there was an abundance of online articles related to AD itch and prurigo, the readability of the available information was low. As online health information has become essential for patients' well-being and in making shared decisions between patients and physicians, an improvement in those materials seems to be of importance.

## *IL.6*
## METHODS AND DEVICES TO ASSESS PRURITUS IN AD

*Akihiko IKOMA*
*Tamaki Skin Clinic and Maruho Co. Ltd., Osaka, Japan*

Pruritus is a major symptom and significantly affects the quality of life in patients with atopic dermatitis. The management of pruritus is a key component in the treatment of atopic dermatitis, similarly to the suppression of skin inflammation, since pruritus worsens skin inflammation through the itch-scratch vicious cycle. In order to control pruritus, it is essential to accurately assess the severity of pruritus. In the settings of daily practice as well as clinical studies, subjective assessment is usually conducted, in which visual analogue scale and numerous rating scale are the most prevailing scales. There are a few other advanced scales to obtain more detailed information on the characteristics of pruritus. However, there are inevitable limitations in those scales of subjective assessment. It is hard to assess pruritus by subjective methods in small children and elderly people with cognitive disorders. Pruritus during sleep is another hard item to assess by subjective methods. To overcome these difficulties, researchers have been trying to assess pruritus by objective methods. The use of motion sensors to detect wrist movement in scratching has been studied in the last few decades. Recent

advancement in technologies of mobile devices and software has led to improvement in the accuracy and usability and made some products commercially available for use in research and clinical settings. It is of note that the use of motion sensors has recently been expanded from just assessment to therapeutic purposes.

### *IL.7*
### NEW TARGETED THERAPIES FOR ATOPIC DERMATITIS

*Andreas WOLLENBERG*[1,2,3]

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Atopic dermatitis (AD) is a clinically defined, chronic inflammatory skin disease with a high patient burden and a high socioeconomic impact. Targeted therapy with monoclonal antibodies blocking the Th2 cytokine signalling pathway such as Dupilumab, Tralokinumab and Lebrikizumab has opened a new era of treatment for AD patients. A number of new monoclonal antibodies has been investigated for their potential to treat AD, which may or may not become available in many countries in the future. These new antibodies include, among others, Nemolizumab (Galderma, blocking the IL-31 pathway), Amlitelimab (Sanofi, blocking the OX-40 pathway), Rocatinlimab (Amgen, blocking the OX-40 pathway) and Temtokibart (Leo, blocking the Th-22 pathway). Bi-specific antibodies with combinations of the above-mentioned targets are also in development. Another new strategy are extended half-life antibodies targeting structures which are already known to be useful targets for AD treatment. This presentation will summarize the newest developments in the field.

### *IL.8*
### JAK-INHIBITORS FOR TREATMENT OF AD

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Abstract summary not available at the time of printing

### *IL.9*
### INTERNET DATA MINING AND AD

*Diamant THACI*

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Abstract summary not available at the time of printing

# ORAL LECTURE ABSTRACTS (OL)

## *OL.1*
## SINGLE CELL ANALYSIS RECLASSIFIES ECZEMATOUS MYCOSIS FUNGOIDES AS SEVERE ATOPIC DERMATITIS

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Patients refractory to atopic dermatitis (AD) treatment progressing to cutaneous T cell lymphoma (CTCL) have been reported globally. We previously classified these patients as 'eczematous' MF (eMF) after diagnostic confirmation through IHC and T cell receptor (TCR) monoclonality tests on skin biopsies. However, the underlying molecular mechanisms remain unexplored. To elucidate the underlying molecular mechanisms of eMF and AD to identify differences and discover therapeutic approaches. Skin biopsies from 7 severe AD patients and 6 eMF patients underwent combined single-cell RNA gene expression and TCR clonality analysis. Over 30 T cells (4% to 56% of the total T cell population) with identical TCR clones were found only in eMF samples. Comparing public CTCL biopsy samples to our eMF samples showed a distinct difference: unlike CTCL, eMF samples had multiple expanded TCR clones. This suggests two scenarios: 1) Neoplastic expansion of a single progenitor into multiple distinct clones or clonal expansion of multiple neoplastic clones; or 2) a non-neoplastic (eczematous) condition with unusual large clonal expansions, challenging conventional paradigms of clonal dynamics in inflammatory skin disorders. Additionally, expanded T cells predominantly produce IL-13 or IL-22, or both, explaining the limitations of existing AD therapies that target type 2 inflammation and emphasizing the importance of therapies targeting multiple, comprehensive cellular targets. In conclusion, our study identified distinct T cell receptor clone expansions in eczematous MF (eMF) patients compared to atopic dermatitis (AD) patients. This finding suggests unique molecular mechanisms underlying eMF, potentially implicating novel therapeutic targets for this condition.

## *OL.2*
## THE NEUROPEPTIDE ENDOTHELIN-1 DRIVES SKIN BARRIER DISRUPTION

*Rari LEO[1,2], Anh JOCHEBETH[1,2], Nabeel ABDULRAHMAN[1,2], Maha Victor AGHA[2], Shahad M. YOUNIS[2], Febu Elizabeth JOY[1,3], Ayda ALHAMMADI[1,3], Sara AL-HARAMI[4], Ahmed AL-QAHTANI[4], Fareed AHMAD[1,2], Angeliki DATSI[5], Jianghui MENG[6], Martin STEINHOFF. PhD[1-3,7-9], Majid ALAM[1,2*], and Joerg BUDDENKOTTE[1-3]*

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Atopic dermatitis (AD) is a common relapsing inflammatory skin disease driven by an imbalance of the immune system, and disruption of the skin barrier, both resulting in (neurogenic) inflammation and pruritus. We hypothesized that the pruritogen endothelin-1 (ET-1) contributes to AD by impeding skin barrier formation through its cognate receptor endothelin A receptor (ETAR). We utilized differentiated human keratinocytes in vitro and whole skin ex-vivo skin organ cultures to assess the impact of ET-1 on human skin barrier function. ET-1 effects were evaluated on RNA transcript level by RT-qPCR and on protein level by quantitative immunofluorescence microscopy analysis. The barrier integrity of differentiated human keratinocytes was assessed by monitoring cell impedance (resistance) over time and applying a standard permeability assay utilizing FITC-dextran. We observed that ET-1 reduced cell resistance post differentiation of human keratinocytes while increasing permeability, effects abrogated by inhibition of ETAR with bosentan, suggesting that ET-1/ETAR are contributing to skin barrier disruption. Consistent with this data, ET-1 repressed the expression of several skin differentiation markers including filaggrin and loricrin, and tight junction proteins such as claudin-1, and claudin-4 in human keratinocyte cultures. Immunofluorescence-based analysis of human skin organ cultures further corroborated the reduction of tight junction proteins and differentiation markers at the protein level. Our data indicates that ET-1/ETAR may contribute to skin barrier impairment during AD by repression of terminal differentiation markers and tight junction proteins and warrants further clinical investigation as a therapeutic target for the treatment of AD patients.

## *OL.3*
## STRATUM CORNEUM INTERLEUKIN-2 IN FACIAL ECZEMA AT 1-MONTH-OLD PREDICTS LATER ATOPIC DERMATITIS

*Eriko MAEHARA[1], Makiko KIDO-NAKAHARA[1], Yasuyuki FUJITA[2], Kiyoko KATO[2], Saki KIDO[2], Ryo YAMASAKI[3], Satoshi NAGATA[3,4], Junji KISHIMOTO[5], Hiroko WATANABE[5], Eri HARADA[6], Yumiko NAGASHIMA[6], Eisuke UMENO[7], Gaku TSUJI[1,8], Hitokazu ESAKI[1], Takeshi NAKAHARA[1,8]*

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The pathogenesis of infantile facial eczema, which occurs within the first month of life, and its relationship with atopic dermatitis (AD) remains unclear. We aimed to identify biomarkers predictive of whether infantile facial eczema will remit spontaneously or diagnose later AD. We enrolled 1-month-old infants without (n=55) or with facial eczema (n=98) followed up for potential AD until 5 months of age. A tape stripping technique was used to collect stratum corneum (SC) from the cheek at 1 month of age. Twenty-three cytokines/chemokines were analyzed using multiplex immunoassays. Barrier function, sebum amount, and serum squamous cell carcinoma antigen 2 (SCCA2) level were also measured. The analysis included 19 healthy infants (No facial eczema group), and 17 with spontaneous remission and 46 diagnosed with AD at 5 months of age (facial eczema group). Among infantile facial eczema cases, elevated SC IL-2, CCL26, and CCL20 levels at 1 month increased the risk of AD at

5 months of age. When IL-2 levels were dichotomized into low and high values based on the receiver-operating characteristic curve cut-off value (7.4 pg/µg protein), the odds ratio for AD by 5 months of age in the high-value group was 11.9(95% CI: 2.9–48.2, P < .001). Barrier dysfunction and elevated serum SCCA2 levels were observed in both Spontaneous remission and AD-diagnosed groups compared with healthy controls, proving their ineffectiveness for predicting AD. Our findings support a potential role for SC IL-2 as a biomarker for predicting later AD in infantile facial eczema.

## *OL.4*
## DUPILUMAB TREATMENT PROVIDES SUSTAINED IMPROVEMENT IN SKIN BARRIER COMPOSITION AND FUNCTION IN PATIENTS AGED 6 TO 11 YEARS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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Protein-bound ceramides (CER[P-O]), specialized ceramides covalently bound to corneocytes surface proteins, act as scaffold for lipid lamellae and are essential for skin barrier (SB) permeability. Previous studies show altered levels of long- and short-chain ceramides ratios in the stratum corneum of adult patients with moderate-to-severe atopic dermatitis (AD), which were normalized by dupilumab (DUP) treatment. We report the impact of DUP on SB composition and function in patients aged 6–11 years with moderate-to-severe AD. PELISTAD (NCT04718870) was an open-label study on SB function in which 23 children aged 6–11 years with moderate-to-severe AD were treated with DUP for 16 weeks ([w]; follow-up: 12w) based on baseline (BL) patient weight (300 mg q4w: ≥15 kg to <30 kg; 200 mg q2w: ≥30 kg to <60 kg) and matched with 18 healthy volunteers. TEWL (g/m2/h) after 15 skin tape strippings was longitudinally assessed in lesional/non-lesional skin (LS/NLS) of patients and in healthy skin (HS). Carbon 22 sphingosine (C22S) CER(P-O) were assessed by mass spectrometry. After 16w of DUP, median (95% CI) TEWL significantly decreased in LS (48.8 [32.5, 65.0]) and NLS (58.3 [41.2, 75.4]) compared with BL (89.6 [74.5, 104.8], P < 0.0001; 71.8 [48.8, 94.7], P < 0.05; respectively). At W28, least squares mean (SE) TEWL in LS (37.4 [4.5]) had reached levels comparable to HS (38.7 [5.2]; P = 0.86). Similarly, NLS (35.3 [4.1]) did not significantly differ from HS at W28 (39.3 [5.0]; P = 0.56). Mean (95% CI) C22S CER(P-O]) at BL were significantly lower in LS (29.4 [18.3, 40.5] compared with HS (77.6 [53.6, 101.7]; P < 0.05), which was normalized by W16 (52.4 [33.3, 71.5] vs 89.1 [45.2, 133.0]; P = 0.23) and sustained up to W28 (P = 0.15). DUP improves TEWL and C22S CER(P-O) levels in patients aged 6-11 years with moderate-to-severe AD, showing normalization of SB function and permeability.

## *OL.5*
## METHOTREXATE AND CICLOSPORIN IMPROVE SKIN BIOMARKERS IN CHILDHOOD ATOPIC DERMATITIS: RESULTS FROM THE TREAT TRIAL

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Methotrexate (MTX) and ciclosporin (CyA) are the main conventional systemic treatments for severe atopic dermatitis (AD) globally. The Treatment of severe Atopic Eczema in children Trial (TREAT) found that CyA led to faster disease control, while MTX showed sustained disease control post-therapy. There remains a significant gap in understanding the complex interaction and modulation of AD immune biomarkers. The aim of this study was to explore the dynamic shifts in skin immune biomarkers among paediatric AD patients on CyA or MTX treatment. TREAT was a parallel group, assessor-blinded randomised clinical trial, in 2-16 year olds with severe recalcitrant AD, on CyA or MTX for 36 weeks, and followed up for 24 weeks after therapy cessation. A subgroup (n=43) of patients, were included in this study: 22 on CyA and 21 on MTX. Tapestrips were collected at baseline, 12, 36 and 60 weeks for cytokine and natural moisturising factor (NMF) analysis. NMF increased only after MTX treatment, at weeks 12 and 36. Both therapies reduced IL-18, CXCL8, IL-17, CCL17 and CCL27 from baseline. However, at all timepoints, a greater number of biomarkers were altered from baseline with MTX compared to CyA. In the MTX group at week 36, IL-1α increased while CXCL8 and CCL17 decreased. At week 60, IL-1α and IL-18 increased while CCL27 decreased. These differences were not seen with CyA. All biomarkers except IL-1α and NMF positively correlated with EASI, with CXCL8 showing the strongest association (r=0.5; P<0.0001). This study shows the distinct immune signatures underlying the clinical improvement seen with CyA and MTX. MTX may exert a more disease modifying effect than CyA, through a stronger effect on skin barrier health (NMF, IL-18, IL-1α), reduced trafficking of tissue resident T-cells (CCL27) and neutrophils (CXCL8) as well as dendritic cell activity (CCL17).

## *OL.6*
## CHANGES IN ORAL MICROBIOME OF ATOPIC DERMATITIS (AD) PATIENTS TREATED WITH DUPILUMAB OR UPADACITINIB

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Atopic dermatitis (AD) is a common chronic inflammatory skin disease characterized by skin barrier dysfunction and severe pruritus. Patients with AD demonstrate altered cutaneous and intestinal microbiome which affects functioning of the immune system, stimulating proinflammatory responses. Knowledge about these alterations and ability to modify the abnormal microbiome would offer new strategies to prevent and treat AD. It is of particular importance as moderate to severe AD is often refractory to topical or systemic treatments. Modern personalized treatment approaches require a comprehensive analysis of various factors that may be relevant to successful therapy. The effect of systemic immunosuppressive drugs including adverse reactions, may depend on changes in microbial communities in the oral cavity. The present study focuses on changes in the oral microbiome

of AD patients treated for 16 weeks with dupilumab, an interleukin-4 receptor alpha antagonist, or upadacitinib, an oral Janus kinase 1 (JAK-1) inhibitor. The metagenomic analyses based on V3-V4 16S rDNA revealed significant changes of the bacterial populations during treatment within Firmicutes, Bacteroidota, Proteobacteria, Actinobacteriota and Fusobacteriota types. The results suggest the need to implement metagenomic analyses to aid in monitoring the treatment of autoimmune diseases.

## *OL.7*
## MATERNAL SUPPLEMENTATION WITH PREBIOTICS DURING PREGNANCY REGULATES COLONIZATION OF THE MICROBIOTA OF HIGH-RISK CHILDREN, BUT DOES NOT PREVENT ATOPIC DERMATITIS AT ONE YEAR OF AGE: THE PREGRALL MULTICENTER RANDOMIZED CONTROL TRIAL

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New primary preventive therapeutic strategies for atopic dermatitis (AD) are needed. Atopic diseases are linked to disrupted gut microbial balance in early life suggesting that optimizing microflora through intervention could improve health. Prebiotics, which are immunomodulatory sugars, promote the diversity of the gut microbiota. Most clinical trials focus on improving postnatal infant gut colonization but prenatal life is crucial for establishing tolerance mechanisms. Preclinical studies indicate that maternal intake of galacto-oligosaccharide (GOS)/inulin prebiotics reduces food allergy risk in offspring. We aim to determine if antenatal prebiotics intake prevents AD in high-risk children. In this randomized, multicenter, double-blind trial, we evaluated the effectiveness of antenatal GOS/inulin supplementation in pregnant women versus placebo (maltodextrine) on AD occurrence at 1 year in at-risk children. Women were randomized to daily prebiotics or placebo intake from 20 weeks' gestation until delivery. Secondary endpoints included AD severity, quality of life, prebiotics tolerance and prevalence of other atopic diseases. We recruited 376 pregnant women. Prebiotic supplementation did not prevent AD at 1 year (intention to treat population; OR [IC95%] 1.01 [0.59; 1.74] p=0.97), or reduce disease severity. Subgroup analyses by breastfeeding status or delivery mode showed no differences between groups. Prebiotic intake increased maternal gut bifidobacteria as well as Bidfidobacterium longum in children gut during the first 5 days of life. While maternal intervention with prebiotics did not protect against AD at 1 year, the modulation of biological parameters in both mother and child might offer long-term protection against atopic diseases.

## *OL.8*
## SERPINB7 MUTATIONS IN HEREDITARY PALMOPLANTAR KERATOSIS AND ATOPIC DERMATITIS

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Inherited keratoderma is a group of diseases with many classifications, cross phenotypes and strong heterogeneity. A notable association has been reported between certain forms of inherited keratoderma and atopic dermatitis (AD), a common chronic inflammatory skin disease. However, the interplay between genetic predispositions and the co-occurrence of AD with inherited keratoderma warrants further exploration. To analyze the genetic mutations underlying hereditary palmoplantar keratosis (PPK) in conjunction with AD. We conducted a comprehensive genetic analysis on pediatric patients, who were divided into 3 cohorts: Group 1 consisted of individuals diagnosed with inherited PPK without AD; Group 2 included those with inherited PPK and a confirmed diagnosis of AD; and Group 3 comprised patients with Nagashima-type PPK (NPPK), a prevalent hereditary form with a known SERPINB7 mutation at c.796C>T. In group 1, the genetic landscape varied with 25% of patients exhibiting a KRT9 mutation indicative of epidermolytic PPK (EPPK), 12.5% with a GJA1 mutation suggestive of erythrokeratodermia variabilis progressiva (EKVP), and 62.5% harboring a SERPINB7 mutation, characteristic of NPPK. Intriguingly, all patients in Group 2 diagnosed with both inherited PPK and AD, presented a homozygous SERPINB7 mutation at c.796C>T. In Group 3, 8 NPPK patients (80%) were accompanied with AD, either with AD history or existing AD lesions. Since functional deficiency of SERPINB7 might induce overactivation of serine protease, resulting in compromised skin barrier integrity. Thus, we concluded that SERPINB7 may be a key factor in the coexistence of AD and NPPK, potentially serving as a susceptibility gene for AD. Further investigations are necessary to clarify the role of SERPINB7 in the pathogenesis of AD.

## *OL.9*
## THE CRITICAL FUNCTION OF A PERIPHERAL-INDUCED SPECIFIC SKIN-RESIDENT TREG CELLS IN ALLERGEN-SPECIFIC IMMUNOTHERAPY FOR ATOPIC DERMATITIS

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Allergen-specific immunotherapy (SIT) is a highly effective treatment for atopic dermatitis (AD) that enhances immune tolerance, with regulatory T (Treg) cells playing a crucial role. However, a detailed understanding of the phenotype and function of skin-resident Treg cells during SIT is still lacking. This study aimed to investigate the specific lineage of Treg cells in SIT for patients and mouse models with AD sensitized to house

dust mites (HDM). We performed whole-transcriptome analysis of peripheral blood mononuclear cells (PBMCs) derived from CD4+CD25hiCD127Low cells from both responders (R) and non-responders (Non-R) to SIT. We further analyzed skin samples from SIT-R patients and several transgenic mouse models to identify and quantify skin-resident Treg cells, correlating these findings with clinical indicators of AD. Notably, after SIT, the R group exhibited a significant upregulation of RORC (RORγt) expression in Treg cells, indicating a unique transcriptomic identity. Additionally, SIT-R patients showed an increased percentage of RORγt+FoxP3+ Treg cells in human skin, with a higher proportion in the skin compared to PBMCs. We confirmed that RORγt+FoxP3+ Treg cells originate from a peripheral lineage and serve as a protective Treg subset in the skin, suppressing Th1, Th2, and Th17 cells by secreting IL-10. Furthermore, skin-resident CD69+RORγt+ Treg cells were found to actively participate in the immune response after SIT in both patients and mice. Correlation analysis showed that SIT-induced skin-resident CD69+RORγt+FoxP3+ Treg cells were inversely correlated with allergen-specific IgE levels and eosinophil counts. These findings are crucial for skin-resident RORγt+ Treg cells to restore immune homeostasis in AD patients and provide novel insights into the therapeutic efficacy of SIT.

## *OL.10*
## JAK1 INHIBITOR IMPROVES SKIN BARRIER FUNCTION AND ASSOCIATED PROTEOMICS IN ATOPIC DERMATITIS: A CONTROLLED REAL-WORLD STUDY

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New treatments are approved for moderate-to-severe atopic dermatitis (AD). While dupilumab has shown effectiveness in restoring skin barrier function, the impact of JAK1 inhibitors on skin barrier function and differences in epidermal protein changes remain unclear. To investigate the skin barrier function in AD before and following different targeted therapies. Twenty-nine adult patients with moderate-to-severe AD were randomized into two groups: one received dupilumab (N = 14), and the other received abrocitinib (N = 15). Fifteen healthy controls were also included. Clinical assessments (EASI and PP-NRS) and skin barrier parameters (TEWL and hydration) were measured at baseline and at 4 and 12 weeks of treatment. Skin tape strips were collected for four-dimensional label-free quantification (4D-LFQ) proteomics. AD lesions had higher TEWL and lower hydration than healthy or non-lesional skin. Abrocitinib showed a more pronounced reduction in lesional TEWL and a significant improvement in non-lesional TEWL and lesional hydration compared to dupilumab. Proteomics identified differentially expressed proteins in lesional and non-lesional skin. AD lesions had increased keratinocyte proliferation markers and decreased epidermal differentiation and structural barrier proteins. Functional enrichment analyses revealed dysregulated ceramide metabolism and neuro-related pathways in lesional skin and disrupted keratinocyte biology in non-lesional skin. Abrocitinib upregulated pathways related to cornification, keratinocyte differentiation, and lipid metabolism, while downregulating type 2 immune response and neurogenesis pathways. Abrocitinib provides a rapid and potent intervention to restore skin barrier functions in AD.

## *OL.11*
## ATOPIC DERMATITIS: UNTANGLING THE AUTOIMMUNITY NOVEL INSIGHTS IN THE ERA OF TARGETED IMMUNOTHERAPY

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The story started in 2014, when a team of researchers at Mount Sinai proved the basis of the autoimmune-directed nature of AD. This review and meta-analysis address in depth the novel autoimmune pathways of AD in the era of targeted immunotherapy. Previously published data and observational studies were collected by retrieving published literature from PubMed/Google Scholar/the Web of Science using «Atopic Dermatitis and recommendations and guidelines». There has been a lot of progress in the last decade in understanding the immunopathogenesis of AD and ascertaining the consolidation of the 2 major previous hypotheses (inside-out & outside-in hypotheses) proposed by Silverberg NB and Silverberg JI in 2015. Implicating both theories to play parts—inflammation as the culprit and subsequent immune dysregulation. In AD, the damaged epidermal barrier is a crucial point that allows the penetration of potential allergens and/or pathogens to activate keratinocytes, the main immune scavenger cells and via cross-talk between both innate and adaptive immune system arrays with the release of different cascades of cytokines to drive the autoimmune process and contribute to the pathogenesis of AD. Understanding the novel autoimmune insights of AD is pivotal and will help to map out more precise targeted immunotherapy to improve patients' QOL. Indeed, recent and current evidence suggests cytokine-targeted therapy (IL-13 and its inhibitors, tralokinumab and lebrikizumab) to play a crucial role and seem to be a possible treatment for patients with AD. However, more in-depth studies are needed to find the right autoimmunity pathway process in AD. This will help clear up the confusion and choosing the right targeted therapy, which began with Dupilumab in 2014, especially for patients with moderate to severe AD.

## *OL.12*
## NEMOLIZUMAB WAS ASSOCIATED WITH RAPID AND SIGNIFICANT IMPROVEMENTS IN ITCH AND SLEEP IN PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS: RESULTS FROM TWO GLOBAL PHASE 3 PIVOTAL STUDIES (ARCADIA 1 AND ARCADIA 2)

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Itch is the most burdensome symptom in atopic dermatitis (AD), contributing to heavy sleep disruption. Nemolizumab, an interleukin-31 (IL-31) alpha antagonist inhibits the IL-31

pathway of itch and inflammation in AD.Two global phase 3 studies (ARCADIA 1 and ARCADIA 2) showed that nemolizumab + topical corticosteroids with/without topical calcineurin inhibitors (TCS/TCI) significantly improved itch, skin lesions and sleep at Week (W)16 with efficacy being maintained up to W48. To assess the speed of onset of itch and sleep response with nemolizumab + TCS/TCI in patients with moderate to severe (MtS) AD. ARCADIA 1 and ARCADIA 2 were two global, identically designed, phase 3 studies, where patients (aged ≥12 years) with MtS AD were randomized (2:1) to either 30 mg nemolizumab + TCS/TCI every four weeks or placebo +TCS/TCI. Significant ($p<0.0001$) improvements in itch (least squares [LS] mean ± standard error [SE] change from baseline (CFB) in Peak Pruritus Numerical Rating Scale (PP NRS) were achieved in nemolizumab- vs placebo-treated patients by Day 1 in ARCADIA 1 (-0.9±0.06 vs -0.5±0.08) and ARCADIA 2 (-1.1±0.07 vs -0.4±0.10). Significantly ($p<0.001$) greater proportions of nemolizumab- vs placebo-treated patients achieved ≥4-point improvement in PP NRS by Day 2 in ARCADIA 1 (9.4% vs 3.4%) and Day 1 in ARCADIA 2 (8.2% vs 1.9%). Improvements in sleep mirrored improvements in itch. Significantly greater proportions of nemolizumab- vs placebo-treated patients achieved ≥4-point improvement in Sleep Disturbance NRS by Day 2 in ARCADIA 1 (8.7% vs 4.0%; $p<0.01$) and Day 1 in ARCADIA 2 (10.0% vs 2.6%; $p<0.001$). Treatment with nemolizumab + TCS/TCI led to rapid (within 2 days), statistically significant, and clinically meaningful improvements in itch and sleep in patients with MtS AD.

## *OL.13*
## EFFICACY AND SAFETY OF UPADACITINIB IN ADOLESCENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS VERSUS DUPILUMAB

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Atopic Dermatitis (AD) is a chronic inflammatory skin disease characterized by intense itch and eczematous skin lesions. Both upadacitinib (UPA), a selective oral Janus kinase inhibitor, and dupilumab (DUPI), a monoclonal antibody that inhibits interleukin (IL)-4 and IL-13 signaling, are approved for the treatment of AD in adolescents and adults. Here we assess the efficacy and safety of UPA, compared to DUPI, in adolescents over 16 weeks of treatment. Level Up is an on-going Phase 3b/4 global, randomized, open-label, efficacy assessor blinded, head-to-head multi-center study evaluating UPA vs DUPI in adolescents and adults with moderate-to-severe AD with an inadequate response to systemic therapy or when those therapies were inadvisable. Patients were randomized to receive UPA 15mg or DUPI as labeled for the first 16 weeks (Period 1). Beginning at week 4, dose escalation to UPA 30 mg occurred if protocol criteria were met. Efficacy was assessed by Eczema Area and Severity Index (EASI) and Worst Pruritus Numerical Rating Scale (WP-NRS) using non-responder imputation. Safety was assessed throughout the study. A total of 57 adolescents were randomized to UPA and 60 to DUPI. At week 16, a higher proportion of patients receiving UPA simultaneously achieved EASI 90 and WP-NRS 0/1 compared to patients receiving DUPI (28.1% [95% CI 16.4, 39.7] vs 13.3% [4.7, 21.9], respectively). Additionally, a higher proportion of patients receiving UPA compared to DUPI achieved EASI 100 at week 16 (26.3% [14.9, 37.7] vs 5.0 [0.0, 10.5], respectively). No new safety signals were identified in this period. A higher proportion of adolescent patients receiving UPA, compared to DUPI, achieved simultaneous EASI 90 and WP-NRS 0/1 with similar trends observed for EASI 100 at week 16. No new safety signals were identified.

## *OL.14*
## ATOPIC DERMATITIS IN ETHIOPIANS: THE ROLE OF RARE FLG2 AND NOD2 VARIANTS

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Atopic dermatitis (AD) is a chronic, itchy inflammatory skin disorder that affects 2–10% in adults and 15–30% in children. AD's pathogenesis involves genetic and environmental factors. Three loss-of-function variants in the FLG gene are key susceptibility factors in Europeans, but are absent in Africans, where AD prevalence is high. This study aims to identify genetic origins of AD in African ancestry populations by examining multigenerational families and case-control cohorts. DNA samples and skin biopsies were collected from a three generation Ethiopian AD family (12 individuals), AD patients (n = 189) and healthy controls (n = 203). Whole genome sequencing (WGS) was performed on three affected and two unaffected family members. Variants were analyzed using SIFT, Polyphen2, CADD, and GERP++. Identified variants were genotyped in case-control cohorts. Protein expression was detected in skin biopsies. WGS revealed two rare deleterious missense variants within FLG2 (D13Y) and NOD2 (A918S) genes, co-segregating with AD in the affected family individuals. We followed up by genotyping a case-control Ethiopian cohort and found a significant association with FLG2 p.D13Y variant ($p < 0.0003$), as well as the variants NOD2 p.A849V ($p < 0.0085$) and p.G908R ($p < 0.0036$). In addition, immunohistochemistry of skin biopsies of Ethiopian AD individuals carrying the associated variants show reduced expression of FLG, FLG2 and NOD2, with FLG2 expression remarkably reduced in the stratum granulosum due to the p.D13Y variant. Our findings suggest that the identified variants in NOD2 and FLG2 may play significant roles in the etiology of AD in Ethiopians. Further genetic and functional research is required to confirm the involvement of these genes and their associated variants in the development of AD.

## *OL.15*
## IMPROVEMENT IN SLEEP AND QUALITY OF LIFE WITH ABROCITINIB VERSUS DUPILUMAB IN PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS AND SEVERE ITCH: A POOLED ANALYSIS OF 2 RANDOMIZED TRIALS

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Atopic dermatitis (AD) is characterized by variable itch and skin lesional severity. Itch is associated with sleep loss and decreased quality of life (QoL). Abrocitinib provided rapid itch relief in patients with moderate-to-severe AD versus dupilumab in the phase 3 trials JADE COMPARE (NCT04345367) and DARE (NCT04345367). To evaluate the impact of abrocitinib and dupilumab on sleep and QoL in patients with severe itch and variable skin lesional severity. This post hoc analysis included data from adults with severe itch at baseline (Peak Pruritus Numerical Rating Scale score 7-10) who received abrocitinib 200 mg or dupilumab 300 mg in JADE COMPARE and DARE. Skin lesions were categorized at baseline as moderate (Investigator's Global Assessment [IGA] 3) or severe (IGA 4). Assessments were Dermatology Life Quality Index (DLQI) 0/1 (no effect on QoL) and SCORing AD (SCORAD) Sleep Loss Visual Analog Scale (VAS) score <2 (little/no sleep loss) at Weeks 2 and 16, and Patient-Oriented Eczema Measure (POEM) score <3 (clear/almost clear AD) at Week 16. The analysis comprised 498 patients with severe itch and moderate lesions (SIML [itch-dominant AD]) and 377 patients with severe itch and severe lesions (SISL). Week 2 responses were greater with abrocitinib than dupilumab for DLQI 0/1 (SIML 21% vs 6%; SISL 16% vs 6%) and SCORAD Sleep Loss VAS <2 (41% vs 25%; 37% vs 20%). Responses were sustained through Week 16 for DLQI 0/1 (SIML 35% vs 26%; SISL 33% vs 26%) and SCORAD Sleep Loss VAS (68% vs 59%; 71% vs 62%). Week 16 POEM <3 responses were greater with abrocitinib than dupilumab (SIML 26% vs 11%; SISL 26% vs 13%). Abrocitinib resulted in rapid and sustained improvements in sleep and QoL compared to dupilumab in patients with severe itch and variable skin lesional severity. Efficacy was consistent among patients with SIML and SISL.

## *OL.16*
## DUPILUMAB TREATMENT PROVIDES SUSTAINED, CONSISTENT IMPROVEMENTS OF SIGNS AND SYMPTOMS OVER 1 YEAR IN PEDIATRIC PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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As symptoms of atopic dermatitis (AD) wax and wane over time, disease control is best represented by consistency of response over a long treatment duration rather than a single time point. To evaluate the proportion of pediatric patients who achieve and maintain mild disease (Eczema Area and Severity Index [EASI] score < 7) and/or mild/no pruritus (SCORing Atopic Dermatitis [SCORAD] Pruritus Visual Analog Scale [VAS] score < 4) across 5 visits during a 1-year open-label extension trial of dupilumab. Patients who previously participated in 16-week trials, aged 0.5–5 years (LIBERTY AD PRESCHOOL; NCT03346434), 6–11 years (LIBERTY AD PEDS; NCT03345914), and 12–17 years (LIBERTY AD ADOL; NCT03054428), were subsequently enrolled in the ongoing phase 3, open label extension trial, LIBERTY AD PED-OLE (NCT02612454). Patients were treated with 300 mg q4w or 200/300 mg q2w (body weight <60 or ≥60 kg, respectively). In this analysis, patients were assessed for maintenance of EASI score < 7, SCORAD Pruritus VAS < 4, or both, at 5 timepoints; Weeks 4, 16, 28, 40, and 52. In 763 patients, EASI <7 was maintained in at least 4/5 timepoints in most patients (0.5–5 years [109/173; 63%]; 6–11 years [189/324; 58%]; 12–17 years [133/266; 50%]). The same was true for mild/no pruritus (0.5–5 years [109/173, 63%]; 6–11 years [226/324, 70%]; 12–17 years [180/266, 68%]). A combined endpoint of EASI <7 and mild/no pruritus was observed in at least 4/5 timepoints in 48% of patients aged 0.5–5 years, 44% of 6–11 years, and 36% of 12–17 years. Safety was consistent with the known dupilumab safety profile in patients with AD. Most pediatric patients achieved and maintained a high level of improvement of AD skin signs and pruritus during 1 year of treatment with dupilumab. Results were consistent for infants/preschoolers, children, and adolescents.

## *OL.17*
## ATOPIC DERMATITIS AND PRURIGO NODULARIS IN THE STATE OF QATAR: RETROSPECTIVE STUDY FROM 2015-2023 ON EPIDEMIOLOGY, ASSOCIATED COMORBIDITIES, AND CLINICAL PRACTICE GUIDELINES (CPG) FROM HAMAD MEDICAL CORPORATION

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Atopic dermatitis (AD) and prurigo nodularis (PN) are chronic inflammatory skin conditions with significant impacts on quality of life. AD affects up to 20% of people and PN, characterized by intensely itchy nodules, has an estimated prevalence of 72 cases per 100,000 in the USA. Both conditions involve complex immune and neurogenic changes, often requiring advanced systemic

therapies. In Qatar, limited data on AD and PN exists, prompting this study to investigate their epidemiology, comorbidities, and treatment approaches. The objectives include establishing an epidemiological database, exploring comorbidities, and identifying clinical, immunological and biochemical traits of PN and AD in Qatar spanning from 2015 to 2023. With a final goal of creating a personalized clinical practice guideline (CPG) for AD and PN patients in Qatar. Existing electronic health record databases were used for retrospective analysis of AD and PN patients across Hamad Medical Corporation. PN incidence in the Qatari population peaked in 2017 at 9.0 cases per 100,000 with a prevalence of 15.9 per 100,000 in 2023. AD primarily affects males (18,370 cases) and shows a peak in the 1-10 age group (17,405 cases), with a significant number of Qatari patients (12,038 cases). The PN study involved 477 individuals, predominantly female (53%) and with a mean age of 44 years. PN commonly co-occurs with AD (3.8%), while diabetes and hypertension are less frequent. Levels of total IgE were elevated in PN patients, regardless of clinical AD presence. The study outlines Qatar's first comprehensive effort to characterize the demographics and clinical features of AD and PN. This data supports the development of Qatar's CPG for systemic biologics and JAK inhibitors in AD and PN management, underscoring the need for targeted pruritus therapies whilst considering associated conditions.

## *OL.18*
## MULTIMORBIDITY IN ADULTS WITH ATOPIC DERMATITIS IN A POPULATION-BASED COHORT

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Atopic dermatitis (AD) has been proposed as a systemic disease, due to underlying systemic inflammation and a range of reported comorbidities. We thus aimed to determine associations of AD with multimorbidity (MM) in a cohort from the Northern Netherlands and to elicit patterns of MM in multimorbid participants with AD. We assessed lifetime prevalence of 52 diseases, clustered into 15 domains, combining data from questionnaires, medication and clinical, physical and laboratory assessments in the Lifelines Cohort. Lifetime AD was self-reported, physician-diagnosed and severity based on Patient Oriented Eczema Measure (POEM). MM was defined as two diseases ever present, excluding AD. A categorised morbidity score (cMS) reflected the number of diseases. Associations of AD and AD severity with MM and cMS were tested using binary and multinomial logistic regression, respectively, adjusted for age and sex. Patterns of MM were determined using Latent Class analysis (LCA). We enrolled 37193 participants, of which 8.7% had AD. MM prevalence was 64.9% in participants with AD, increasing with disease severity (mild 62.4%; moderate-to-severe 68.4%) and 52.4% for those without. Risk of having MM was 1.95-fold higher for subjects with AD, with a higher risk for moderate-to-severe (aOR 2.49) than mild AD (aOR 1.73). The association increased with each additional morbidity, reaching 4.08-fold for ≥5 morbidities. Results were confirmed in additional analysis by age and by excluding asthma, rhinitis, and food allergy from MM (non-atopic MM). Based on disease domains, LCA resulted in classification of multimorbid participants with AD into five distinct classes. We showed that participants with AD, especially moderate-to-severe disease, are at higher risk for both MM and non-atopic MM. Whether this is due to systemic inflammation in AD, needs further investigation.

## *OL.19*
## HAND ECZEMA OR ATOPIC HAND ECZEMA: A SINGLE CENTER, PROSPECTIVE STUDY ON CLINICAL FEATURES, ETIOLOGY, AND DIAGNOSIS IN CHINA

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Hand eczema (HE) is a common chronic and recurrent inflammatory skin disease. The diagnostic challenge of HE lies in its complex etiology, diverse morphological presentations and protracted course. To explore the precise etiological diagnosis of HE, we summarized the clinical phenotypes of HE, investigated FLG gene mutations and patch test (PT) in HE, as well as the diagnostic efficacy of Hanifin & Rajka criteria (HRC) and Chinese criteria of AD for children (CCAD) in AD patients presenting with HE. Outpatient HE patients were enrolled and underwent detailed questionnaire surveys, dermatological physical examinations, FLG gene mutation tests for 3321delA and K4671X, and a Chinese baseline comprehensive PT series. This study included 271 Chinese Han patients with HE, aged 1-80 years (36.24±21.21 ys). Dry skin was found in 128 patients, with 61 (47.7%) diagnosed AD by HRC and 110 (85.9%) diagnosed AD by CCAD. Two FLG null mutations were detected in 14/114 HE patients (15.7%), lower than AD populations but higher than normal control from previous reports. Among these 14 patients, 9 (64.3%) and 12 (85.7%) were diagnosed AD by HRC and CCAD. Total 57 HE patients underwent PT: 27 (47.4%) showed positive reactions to three or more allergens, among whom 16 (59.3%) and 21 (77.8%) were diagnosed AD by HRC and CCAD; 17 (29.8%) patients had negative results, among whom 7 (41.2%) and 12 (70.6%) were diagnosed AD according to the 2 criteria. However, no significant differences were found in current study. Whether using HRC or CCAD, the diagnosis rate of AD in HE patients with FLG mutations is higher than those without mutations. HE patients have a tendency for multiple sensitizations, and AD diagnosis is more prevalent compared to HE with negative PT, indicating that AD is more prone to developing contact dermatitis. For AD patients presenting with HE, CCAD has a higher sensitivity.

## *OL.20*
## SKIN PATHOLOGY ASSESSMENT WITH OPTICAL TECHNOLOGIES (SPOT): LEVERAGING OPTICAL BIOMARKERS FOR SUB-CLINICAL ATOPIC DERMATITIS SEVERITY MONITORING

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Atopic dermatitis (AD) is a complex skin condition characterized by both visible and invisible (sub-clinical) inflammation of the skin. Monitoring sub-clinical biomarkers could enable more effective and proactive treatment strategies. To evaluate a range of novel non-invasive biomarkers by building predictive models of cutaneous inflammation. We conducted a cross-sectional study involving 60 patients with mild to severe AD and 20 healthy controls (NCT04295824). A portfolio of biomarkers was collected from both lesional and non-lesional areas of the cubital fossae and cheeks, capturing information relating to hyperplasia, vascular remodelling, skin barrier integrity and the molecular composition of the skin. Multivariate models were developed using step-wise linear-regression in order to assess the ability of combinatory biomarkers to predict the clinical skin severity. Predictive models incorporating all biomarkers showed a strong correlation with local skin severity (R2 = 0.93, RMSE = 0.74), but required extended imaging time. In contrast, a reduced panel of key biomarkers derived solely from Optical Coherence Tomography (OCT) remained highly predictive (R2 = 0.64, RMSE = 1.54), while requiring only seconds for a point measurement. This panel comprised OCT measures of epidermal thickness, attenuation coefficient and collagen-index. Modern optical imaging techniques offer significant advantages over traditional methods like biopsies and blood-tests, providing rapid and non-invasive capture of numerous skin biomarkers. These combined biomarkers offer comprehensive insights, potentially guiding safer and more informed treatment strategies for AD, with a focus on inducing remission and long-term management.

## *OL.21*
## SHOTGUN METAGENOMICS REVEALS MICROBIOME DYSBIOSIS IN DUPILUMAB-ASSOCIATED HEAD AND NECK DERMATITIS

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Dupilumab, an IL-4 receptor α antagonist, effectively treats atopic dermatitis (AD), but has been associated with head and neck dermatitis (HND) in approximately 10-15% of cases in real-world clinical settings. This study aimed to uncover the pathophysiology of dupilumab-associated HND through comprehensive analysis of the skin microbiome, mycobiome, and transcriptome, utilizing advanced shotgun metagenomics in addition to previous 16S rRNA and ITS2 analyses. The study encompassed four patient groups: 1) Dupilumab-associated HND (DAHND), 2) Non-DAHND, 3) Naive AD with HND, and 4) Healthy Controls. Shotgun metagenomics was employed to analyze bacterial, fungal, and viral dysbiosis, alongside functional analysis to identify significant differences in KEGG pathways, antibiotic resistance gene prediction, and virulence factor profiling. Shotgun metagenomics revealed significant dysbiosis in the DAHND group, including a distinct microbial profile with increased Staphylococcus epidermidis and Malassezia globosa and reduced microbial diversity. Functional analysis suggested enrichment of pathways related to immune and defense response. Transcriptomic analysis of skin samples indicated elevated expression of Th2, Th17, and Th22-related gene markers in the DAHND. Our integrative analysis highlights the role of skin microbiome dysbiosis and heightened immune activation in the pathogenesis of DAHND. The addition of shotgun metagenomics provided deeper insights into the functional aspects of microbial dysbiosis, emphasizing its potential in uncovering novel therapeutic targets. Interactions between microbial cytokines or peptides may influence colonization and dysbiosis, contributing to the hyperimmune status. Further studies are warranted to validate these results and develop effective management strategies for DAHND.

## *OL.22*
## THE FEASIBILITY OF USING THE EMERALD TOUCHLESS SENSOR FOR NIGHTTIME SCRATCHING AND SLEEP QUANTIFICATION

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The Emerald touchless sensor (Emerald Innovations, Cambridge, MA), which requires no body contact, is a sensor with a machine learning platform that can monitor scratching and sleep patterns within the patient's home environment without interfering with the patient's activities or movements. To assess the feasibility of using the Emerald touchless sensor for nighttime scratching and sleep quantification. 18 atopic dermatitis patients aged 6-11 who were participants in the PEDISTAD registry at one of the US based sites, were enrolled in the 12-week open-label PEDISTAD Emerald sub-study. Patients were required to sleep by themselves at least 5 nights a week for a minimum of 5 hours. Endpoints assessed included correlation between weekly averages of Emerald-derived nightly scratching events per hour and sleep efficiency defined as total time in minutes in a sleep stage relative to time spent in bed; time in minutes until sleep onset and patient reported peak pruritus NRS (PP-NRS); and percentage of nights with evaluable data. There was a strong negative correlation between scratching events per hour and the median sleep efficiency; Pearson correlation coefficient: -0.66 (P = 0.0032) with a 95% Confidence Interval (CI) of -0.8715, -0.2467. A positive correlation was observed between time until sleep onset and PP-NRS; Pearson: 0.50(P = 0.0494), CI: -0.0169, 0.8057. Of the 16 patients who provided evaluable data, the mean percentage of nights with evaluable data was 96.1%. In this pilot study the Emerald Touchless Sensor was demonstrated for the first time to be both feasible and capable of providing reliable, longitudinal objective measures of itch related scratching and sleep disturbances in children with AD. Additional studies with larger sample sizes are needed.

## *OL.23*
## GENERAL PRACTITIONERS KNOWLEDGE ABOUT USE OF TOPICAL STEROIDS IN ATOPIC DERMATITIS

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Topical steroids (TS) are the standard of care in atopic dermatitis (AD). The management of AD needs greater involvement of

general practitioners (GP) due to a shortage of dermatologists in Madagascar, so their TS'knowledge and practices have high impact in the management of people with atopic dermatitis. We aim to assess general practitioners knowledge about use of topical steroids in atopic dermatitis. A questionnaire survey was completed by GP working in public and private sectors in Antananarivo, Madagascar (from Mars to May 2023). Among 128 GP that were sent the questionnaire, 100 (78.1%) replies were received. 37 were male. Regarding knowledge about the application of TS for each outbreak of atopic dermatitis, 23%, 56% and 7% considered that they should be applied for <7 days, between 7-14 days, and until the flare-up has completely gone, respectively. 74% of the GP instructed parents to apply TS twice daily, and 26% once daily. 72% of GP chose the class of TS according to the severity of AD. 20% reported skin atrophy as the most common side effect of topical steroids. For practices, 59% advised tapering use of TS. 90% of respondents did not use standard measures, such as fingertip unit, to communicate dosing instructions to patients. 71.9% often or systematically informed parents of the potential side-effects of topical steroids in children. During follow-up visits, apart from the assessment of AD clinical course, 24% asked the amount of DC used by patients, and 63% look for possible side effects in their patients. 22% of GP were not confident to their prescription due to corticophobia. More continued educations and evidence-based information on the safety of TS are needed to empower GPs to improve treatment outcomes in atopic dermatitis.

## *OL.24*
## TOPICAL STEROID WITHDRAWAL IN ATOPIC DERMATITIS: PATIENT-REPORTED CHARACTERISATION FROM A SWEDISH SOCIAL MEDIA QUESTIONNAIRE

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Topical steroid withdrawal (TSW) is described as an adverse reaction to topical glucocorticoids (TGCs). The existence of TSW as a distinct pathophysiological entity is debated. Patient concerns for TSW are increasing while healthcare provider engagement remains low. Self-reported signs, symptoms, and definition of TSW have not been systematically investigated. Patients with atopic dermatitis (AD) are frequently treated with TGCs. Symptoms attributed to TSW may occur in this group. To describe patient-reported definition, manifestations, and life impact of TSW. An observational cross-sectional study was performed by posting a questionnaire for participants, aged ≥18 years, reporting both AD and TSW, in a Swedish TSW-themed Facebook group during four weeks in 2023. Participants were anonymous and encouraged to share the questionnaire with others when appropriate. A total of 98 participants entered the questionnaire, with n=82 completing it (95% female, 74% aged 18–39 years). A majority were self-diagnosed with symptoms attributed to TSW (84%) and had symptoms of AD and TSW at the time of response. TSW was defined as both dependency on TGCs and adverse reactions to their use. Erythema, desquamation, dryness, and oozing of the face, neck, and upper extremities were the most reported signs, causing pruritus, sleep disturbance, anxiety, and depression. Recurring episodes were reported by 60%, with 26% reporting five or more episodes. The trigger factor was believed to be TGCs by 92%, but 33% also identified oral glucocorticoids (OGCs) as a trigger. TGCs were currently used by 21%. Signs and symptoms were similar to those of AD but were claimed to be distinguishable for the participants and caused considerable morbidity. Awareness of symptoms attributed to TSW can help healthcare providers improve management of concerns regarding TGCs.

## *OL.25*
## PHAGE THERAPY

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Traditional treatment options often include topical corticosteroids, immunosuppressants, and moisturizers, but concerns about antibiotic resistance and long-term side effects have made interest in alternative therapies such as phage therapy. This study aims to investigate the efficacy and safety of phage therapy in the management of atopic dermatitis, evaluating its potential as a novel therapeutic approach targeting cutaneous dysbiosis and inflammatory pathways. Literature search reviewing index scores, lesion severity, pruritus intensity, and microbial flora analysis pre- and post-treatment. Phage therapy demonstrated promising results in the treatment of atopic dermatitis. Phage therapy represents a novel and effective therapeutic approach for atopic dermatitis, targeting both symptom management and underlying dysbiosis. The observed improvements in clinical outcomes and skin microbiome balance highlight its potential as a well-tolerated and sustainable treatment option. Further research is warranted to optimize phage formulations, explore long-term efficacy and safety profiles, and determine its position in the therapeutic armamentarium for AD.

## *OL.26*
## HADS ANXIETY AND DEPRESSION SCORES IMPROVED IN JAPANESE PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS FOLLOWING LEBRIKIZUMAB TREATMENT: 68-WEEK RESULTS FROM A RANDOMIZED, DOUBLE-BLIND, PLACEBO-CONTROLLED PHASE 3 TRIAL (ADHERE-J)

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Lebrikizumab (LEB) demonstrated efficacy in Phase 3 trials ADvocate1 and ADvocate2 (as monotherapy), ADhere and ADhere-J (in combination with topical corticosteroids [TCS]). We evaluate the impact of LEB combined with low- to mid-potency TCS on Hospital Anxiety Depression Scale Anxiety (HADS-A) and HADS Depression (HADS-D) scores in Japanese patients with moderate-to-severe AD. ADhere-J evaluated the efficacy and safety of LEB+TCS over 16-week induction and 52-week maintenance periods. HADS is a 14-question instrument measuring anxiety and depression (7 items each for HADS-A and

HADS-D). Each question is scored from 0 to 3 with a maximum score of 21 for HADS-A or HADS-D. W16 per protocol responders received LEB+TCS during the maintenance period (maintenance primary population; MPP). Responders were defined as achieving co-primary endpoints at W16: IGA 0,1 and/or EASI 75. W16 non-responders received open-label LEB+TCS (maintenance escape population; MEP). Patients with baseline (BL) HADS ≥8 are also reported (11.7%-20.6% of MPP [n=103] and MEP [n=97]). In the MPP, mean HADS-A score was 4.3 at BL, 2.8 at W16, and 2.3 at W68. HADS-D score was 3.3, 2.4, and 2.2, respectively. In patients with BL scores of HADS ≥8, mean HADS-A score was 9.3 at BL, 6.4 at W16, and 5.1 at W68 and HADS-D score was 9.6, 8.1, and 5.8. In the MEP, mean HADS-A score was 4.8 at BL, 3.8 at W16, and 3.1 at W68. HADS-D score was 4.0, 2.9, and 2.9, respectively. In patients with BL scores of HADS ≥8, mean HADS-A score was 11.0 at BL, 9.0 at W16, and 7.7 at W68 and HADS-D score was 9.6, 6.8, and 6.5, respectively. LEB+TCS improved anxiety and depressive symptoms in patients with moderate-to-severe AD during the acute treatment phase and maintained these improvements over the maintenance period. This effect seemed more pronounced in W16 responder patients.

## *OL.27*
## A NOVEL ANTIMICROBIAL PEPTIDE CATESTATIN MODULATES SKIN BARRIER AND IMMUNE RESPONSES IN ATOPIC DERMATITIS

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Atopic dermatitis (AD) is a chronic inflammatory skin condition characterized by impaired barrier function and exacerbated immune reactions. Antimicrobial peptides, including the chromogranin A-derived peptide catestatin (CST), have emerged as pivotal modulators of skin integrity and immune responses. This study aimed to investigate the therapeutic potential of CST and the underlying mechanisms of CST in moderating AD-like symptoms. Human primary keratinocyte and a C57BL/6 mouse model of AD were used to explore the impact of CST administration on skin barrier-related proteins, tight junction (TJ) integrity, inflammatory cytokine profiles, and AD-like symptoms. The interaction of CST with the Notch1/PKC pathway was evaluated through molecular docking analysis, Western blotting, and targeted inhibition assays. CST treatment notably upregulated the expression of essential skin barrier-related proteins and improved TJ integrity. CST effectively counteracted Th2 cytokine-mediated impairment of skin barrier-related protein expression and the intercellular distribution of TJs. In mice with 2,4-dinitrochlorobenzene (DNCB)-induced AD, CST significantly alleviated AD-like symptoms; reduced ear thickness, transepidermal water loss (TEWL) and scratching; and normalized barrier protein expression and TJ barrier function. Molecular investigations revealed an interaction of CST with the Notch1 receptor, leading to activation of Notch1/PKC pathway; this represents a novel mechanism underlying the barrier-enhancing effects of CST. The results of this study underscore the potential of CST as a multifaceted therapeutic agent for AD that enhances skin barrier function, modulates immune responses, and engages the Notch1/PKC pathway.

## *OL.28*
## DUPILUMAB INJECTION INTERVALS IN ADULT ATOPIC DERMATITIS PATIENTS: EXPERIENCES IN KOREAN PATIENTS

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There is a growing demand for extending the dosing intervals of dupilumab injections in atopic dermatitis (AD) patients due to the treatment burden and prevalent side effects. However, there is a scarcity of studies demonstrating successful dose reduction in real-world settings, and a standardized approach for initiating dose tapering is lacking. To assess the efficacy of a patient-centered dupilumab tapering regimen in controlled adult AD patients, to propose guidelines for target patients, an appropriate interval, and timing for tapering. This single-center retrospective study included adult moderate to severe AD patients who underwent a minimum of 16 weeks of dupilumab treatment. Interval prolongation was considered in patients with controlled disease, assessed by the Eczema Area and Severity Index (EASI) score and serum inflammatory markers, after at least 40 weeks of treatment with a standard regimen. Logistic regression model with generalized estimating equations was used to compare repetitive measurements over time between the two groups, and spaghetti plots were used to illustrate disease courses of patients with extended dosing intervals. A total of 52 patients were included, and 11 patients extended the interval to 3-4 weeks without any flare-ups (mean duration of dupilumab treatment before tapering 53.27 weeks, range 42-64). The tapering group exhibited significantly lower BMI (p value<0.05), and all patients showed EASI scores under 4 and IgE levels under 1000 at week 40, suggesting these cutoff values as criteria for dose tapering. EASI scores and IgE levels remained consistently low after dose reduction, with a mean follow-up time of 14.36 months. Patients with extended dosing intervals demonstrated sustained effectiveness. Dose tapering may be a valuable option for non-obese patients with controlled disease condition.

## *OL.29*
## EFFICACY OF COMBINED TOPICAL PIMECROLIMUS, ANTIBIOTICS, AND TOPICAL IVERMECTIN THERAPY FOR ROSACEA IN 39 PATIENTS AMONG 315 RECEIVING DUPIXENT: A DETAILED ANALYSIS

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Recalcitrant Head and Neck Erythema (RHNE) is an emerging adverse effect associated with Dupilumab therapy. Despite its relatively low prevalence, RHNE can significantly impact patient quality of life and adherence to treatment. This study aims to analyze the effectiveness of combination therapy using topical treatments—Pimecrolimus, and Ivermectin—and systemic therapies, including oral antibiotics (low-dose doxycycline) and barrier restoration with ceramide based moisturizers The primary endpoint was the change in the Investigator Global Assessment of Rosacea Severity Score (IGA-RSS) from baseline to week 8. The IGA-RSS is a validated scale used to assess the severity of rosacea, ranging from 0 (clear) to 4 (severe).Two independent, blinded dermatologists assessed the IGA-RSS to minimize bias. Photographs and clinical evaluations were performed at baseline and at week 8 to document the severity of rosacea.Pa-

tient-Reported Outcomes: Patients completed the Dermatology Life Quality Index (DLQI) at baseline and week 8 to assess the impact of rosacea on their quality of life.Any adverse events related to the treatments were recorded and analyzed. Totally, 39 patients achieved IGA-RSS success .Improvement was observed in 29, clearance in 4, no response in 5, and worsening in 1. Additionally, 23 patients (65.7%) achieved Clinical Erythema Assessment (CEA) success at the end of treatment. The clearance rate of papulopustular lesions was 79.3%. Significant improvement in Rosacea-specific Quality of Life score was observed, along with reductions in flushing, burning, pruritus sensation, and telangiectasia scores In conclusion, this study supports the use of a multifaceted therapeutic approach to effectively manage recalcitrant rosacea in Dupilumab-treated patients, offering significant clinical and quality-of-life benefits.

## *OL.30*
## COMBINED DUPILUMAB AND ALLERGEN-SPECIFIC IMMUNOTHERAPY IN SEVERE REFRACTORY ATOPIC DERMATITIS

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Although combining allergen immunotherapy (AIT) with biologics has shown promise in treating atopic diseases such as asthma and allergic rhinitis, atopic dermatitis (AD) remains notably underexplored in this context. This study aimed to investigate the efficacy and safety of combining dupilumab with subcutaneous immunotherapy (SCIT) for severe AD refractory to standard treatments. This was a single-center retrospective analysis assessing patients with severe AD treated with combined dupilumab and SCIT, dupilumab, or SCIT alone at the Severance Hospital, Seoul, S. Korea. The inclusion criteria encompassed severe AD diagnosis, specific immunoglobulin (Ig) E levels to house dust mite allergens, and treatment follow-up for at least 18 months. Eczema Area and Severity Index (EASI) scores, serum biomarker levels, and adverse event records were regularly collected. Forty-eight patients with AD were analyzed, showing significant improvement in EASI scores and favorable changes in serum biomarkers over 144 weeks. The combination therapy led to a sustained reduction in AD severity, a significant reduction in total IgE and specific IgE levels, and an increment in allergen-specific IgG4. All patients only experienced mild and temporary side effects, not requiring treatment discontinuation. Combining dupilumab with SCIT offers a promising therapeutic option for patients with severe, treatment-refractory AD. It reduces disease severity, induces favorable immunological change, and may offer long-term benefits via the disease-modifying effect of AIT, including sustained remission and reduced reliance on biologics.

## *OL.31*
## DEVELOPMENT OF AN EMULGEL FOR THE EFFECTIVE TREATMENT OF ATOPIC DERMATITIS IN CHILDREN AND ADULTS: BIOCOMPATIBILITY AND CLINICAL INVESTIGATION

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Atopic Dermatitis (AD) is a common dermatological condition affecting both children and adults. No drug-free emulgel has been developed and investigated in vitro and in vivo for the treatment of AD. The aim of this study was to develop and evaluate the efficacy of a topical emulgel containing hyaluronic acid, glycerol, Calendula officinalis, Aloe vera, polyphenols and EGF for the concomitant treatment in patients with AD aged over 2 years. Irritation, sensitisation and cytotoxicity tests were performed to assess the biocompatibility of the emulgel. Objective parameters of skin barrier function such as transepidermal water loss (TEWL), skin temperature, pH, stratum corneum hydration, skin elasticity and erythema were included. Subjective patient opinion was assessed including acceptability, absorption, comfort of use and tolerability, as well as the degree of improvement in patient quality of life. The emulgel was biocompatible and safe. 69 patients were evaluated (mean age 28.57 ± 16.95 years). We observed an improvement in the subjective parameters studied and statistically significant differences in the objective parameters. Specifically, we found an improvement in TEWL ($p = 0.002$), erythema ($p = 0.004$) and hydration ($p < 0.001$), parameters indicating an improvement in the epidermal barrier. One hundred per cent of patients were satisfied with the product. The topical emulgel was effective and well tolerated in children over 2 years of age and adults with mild to moderate AD.

## *OL.32*
## DUPILUMAB EFFICACY AND SAFETY UP TO 2 YEARS IN CHILDREN AGED 6 MONTHS TO 5 YEARS WITH ATOPIC DERMATITIS

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While previous studies of dupilumab treatment in adults with atopic dermatitis (AD) demonstrated sustained efficacy, further study of long-term safety and efficacy regarding dupilumab in children is needed. To present efficacy outcomes of dupilumab treatment in children with moderate to severe AD. Children, 6 months to 5 years with moderate to severe AD, who had participated in prior dupilumab AD studies, were enrolled in a phase 3 open-label extension (OLE) study (NCT02612454). Patients received subcutaneous dupilumab every 4 weeks (5 to <15 kg:200 mg; 15 to <30 kg:300 mg). Topical AD treatment was allowed. Efficacy outcomes included mean (SD) percentage Body Surface Area (BSA) affected and proportion of patients who achieved 75% improvement from baseline in Eczema Area and Severity Index (EASI75) score at each visit, as observed from OLE baseline to 2 years. Safety was also evaluated. 180 patients were included

in the 6 months to 5 years cohort. At OLE baseline, mean (SD) BSA score was 31.3 (22.4), improving to 10.3 (12.8) at Week 52 and 7.7 (8.7) at Week 104. Similarly, 29.4% (53/180) of patients achieved EASI-75 at OLE baseline, improving to 85.1% (137/161) at 52 weeks and 92.1% (93/101) at 104 weeks. Treatment-emergent adverse events (TEAEs) were observed in 87.8% of patients (intensity: mild 24.4%, moderate 52.2%, severe 11.1%). TEAEs assessed by study investigators as related to dupilumab were reported in 18.3% of patients; most prevalent were conjunctivitis (2.8%), allergic conjunctivitis (1.7%), nasopharyngitis (1.7%) and urticaria (1.7%). Serious TEAEs as related to dupilumab were observed in 0.6% of patients. Treatment with dupilumab for up to 2 years in children with moderate to severe AD demonstrated sustained improvement in clinical signs, as shown by BSA and EASI assessments. Results are consistent with the known safety profile for dupilumab.

# WHAT'S NEW FROM THE INDUSTRY LECTURE ABSTRACTS (WL)

## *WL.1*
## WHAT'S NEW FOR ABROCITINIB - SUMMARY OF KEY EVIDENCE FOR M2S ATOPIC DERMATITIS

*For Pfizer: Erman GÜLER*

Abstract summary not available at the time of printing

## *WL.2*
## IN SEARCH OF THE HOLY GRAIL IN ATOPIC DERMATITIS: IS DUPILUMAB THE FIRST DISEASE-MODIFYING ATOPIC DERMATITIS DRUG?

*For Sanofi: Ana ROSSI[1]*

*[1]Dermatologist, Global Senior Medical Director Immunology, Global Medical Indication Lead Dupilumab in Atopic Dermatitis, Cambridge, USA*

The new targeted treatments for Atopic Dermatitis (AD) have changed the paradigm on how we manage the disease. We're now aiming to prevent flares and provide disease control and better quality of life in the long term. The amount of new robust data demonstrating the high impact and burden of moderate-to-severe AD, the underlying systemic type 2 inflammation and the associated effects on skin barrier dysfunction, neuroimmune dysfunction and microbiome has been growing exponentially. The association of AD and atopic and non atopic comorbidities is present in most patients from early age. With the knowledge we have obtained on pathophysiology, measures of disease control, biomakers to assess subclinical inflammation and assessment of associated comorbidities, and the cumulative life course impairment (CLCI) we now should aim to achieve "disease modification" with the new targeted treatments. According to Bieber (Bieber T. Nat Rev Drug Discov. 2023. https://doi.org/10.1038/s41573-023-00735-0) a "disease modifying" treatment in AD should provide clinical remission followed by sustained remission off drug (achieved with sub clinical remission) and reduce or prevent the development of comorbidities. In this provocative and exciting publication Bieber questioned whether Dupilumab would be the first disease modifying treatment for AD. Sanofi and Regeneron team collaborated with experts to consolidate the evidence to answer this question.

## *WL.3*
## ADVANCING PATIENT CARE IN IMMUNE-MEDIATED SKIN DISEASES: THE PAST, PRESENT AND FUTURE OF JAK INHIBITION

*For Abbxie: Mark KIRCHHOF*

Abstract summary not available at the time of printing

## *WL.4*
## IL-13: ROLE IN PATHOPHYSIOLOGY OF ATOPIC DERMATITIS AND HOW TO MASTER THE DRIVER OF INFLAMMATION

*For Lilly: Thomas BIEBER[1,2,3]*

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In contrast to interleukin-4 (IL-4) which seems to mainly play an essential role in the central humoral immune response, i.e., the regulation of the IgE synthesis, interleukin-13 (IL-13) has been recognized as one of the major driving forces in the generation and maintenance of the inflammatory process in peripheral tissues such as in atopic dermatitis. Upon production of the local ILC2, mast cells and most importantly infiltrating Th2 cells, IL-13 exerts pleiotropic biological activities in the context of skin inflammation. Besides impacting on the production of anti-microbial peptides (which at least partly explains the dysbiosis), IL-13 amplifies the genetically driven epidermal barrier dysfunction and can induce itch. IL 13 is significantly increased in lesional and non-lesional skin, in all age groups and all skin tones of AD patients. Therefore, IL-13 has been recognized as an important target for immunopharmacological interventions and 3 biologics targeting the cytokine, or its receptor have been approved so far. While Dupilumab binds on the IL-4Ra chain and thereby inhibits the binding of both IL-4 and IL-13 on the type 1 and the type 2 receptors, tralokinumab blocks directly IL-13 in its binding capacity for the type 2 receptor as well as for the elusive decoy IL-13Ra2 chain. Lebrikizumab although binding with highest affinity to the cytokine, does not block its binding to the type 2 receptor but inhibits the aggregation of the receptor sub-units which hampers the down-stream signal transduction machinery. A number of other targeted therapies aimed at impacting on the biology of IL-13 are currently in development.

# POSTER PRESENTATIONS (P)

## P1. Pathophysiology of AD

### *P1.2*[#392]

### TRANSCRIPTOMIC INSIGHTS INTO PRURIGO NODULARIS: UNRAVELING NEURONAL PROFILES AND IMMUNE RESPONSE

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There has been a notable increase in prurigo nodularis (PN) cases presenting alongside atopic dermatitis (AD), identified as PN with atopic features (AP). Our study aimed to compare AP with typical AD and PN without atopic features at the RNA transcriptomic level to uncover molecular distinctions and shared pathways. Skin punch biopsies (4mm) were obtained from 27 patients and 4 healthy controls. Patients included 13 with AD, 7 with PN, and 7 with AP. Samples were preserved at -20° using RNAlater and extracted with Trizol. Sequencing was performed using the 3' mRNA method on the Hiseq 2500 platform. FASTQ files were processed to produce count matrices. Differentially expressed genes (DEGs) were identified using DESeq2 R package. Single cell RNA sequencing data were sourced from GEO accession GSE222840. Low-quality cells were filtered using python's scanpy package, and data integration was done with scVI-tools. Unsupervised clustering utilized the leiden algorithm. PN showed upregulation of genes linked to inflammation and fibrosis compared to AD. Gene Set Enrichment Analysis indicated increased epithelial-mesenchymal transition related to the extracellular matrix in PN, a pattern also noted in AP versus AD. DEGs between AD and AP, and AD and PN, were mainly related to neural processes. Single cell analysis revealed more cell proportions in PN than AD, with elevated neural process-related gene expression. AP displayed intermediate traits between AD and PN. Both PN and AP showed higher levels of neutrophil-attracting factors, whereas AD had more Type 2-associated mediators. Our study reveals that AP and PN have unique neuronal signatures and shared inflammatory responses compared to AD, highlighting distinct yet overlapping pathogenic pathways. These findings may guide more precise therapeutic approaches for these dermatological conditions.

### *P1.3*[#767]

### LIPIDOMICS OF VERNIX CASEOSA IS MODIFIED BY MATERNAL OVERWEIGHT/OBESITY AND ASSOCIATES WITH DEVELOPMENT OF ATOPIC DERMATITIS IN THE OFFSPRING

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Atopic dermatitis (AD) is linked to alterations in skin lipids. Vernix caseosa (VC), a proteolipid biofilm formed during fetal skin development, is typically removed at birth. VC from babies of mothers with pre-pregnancy overweight/obesity (O/O) shows changes in skin barrier proteins and staphylococcal dysbiosis. However, how maternal O/O impacts fetal skin lipids remains unknown. To evaluate whether VC lipid composition is associated with maternal O/O and risk of AD in the offspring. We conducted a case-control study, collecting VC samples from infants born to mothers with normal weight (NW) and O/O. Lipidomic analysis was performed using mass spectrometry. Parental report of physician-diagnosed AD during infancy in the offspring was obtained prospectively. 20 pregnant women were recruited: 10 with NW (Age: 31.2 ± 5.1 y; pre-gestational BMI: 23.4 ± 0.9) and 10 with O/O (Age: 30.8 ± 3.8 years; pre-gestational BMI: 29.3 ± 3.3). VC samples were collected from 20 newborns (10 females; birth weight: 3295.4 ± 318.4 g; 11 developed AD). Preliminary results show VC from newborns from O/O mothers showed a higher lipid content and alterations in the proportions of cholesterol esters (CE), lysophosphatidylglycerol (LPG), phosphatidylglycerol (PG), and triacylglycerol (TAG). These groups exhibit differences in long-chain, but not in short-chain subtypes. The content of lipids CE24:0;0, CE24:1;0, LPG18:0;0, TAG55:2;0, TAG57:0;0, TAG57:2;0, TAG58:0;0, TAG59:0;0, TAG59:1;0, TAG60:0;0, TAG60:1;0, and cholesterol in VC from infants born to O/O mothers are associated with AD development. VC lipidomics provides a mechanistic link of maternal O/O to skin lipid alterations and the pathogenesis of AD in the offspring. Further analysis of lipid pathways will be conducted to better understand the influence of maternal O/O on the early development of AD in children.

### *P1.4*[#764]

### THE IL-1 FAMILY MEMBER IL-36Γ IMPAIRS SKIN BARRIER THROUGH DOWNREGULATION OF TERMINAL DIFFERENTIATION MARKERS AND TIGHT JUNCTION PROTEINS

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Atopic Dermatitis (AD) is a most common inflammatory skin disorder affecting around 10-22% of children and around 1-8% of adults in industrialized nations. The disease is characterized by dysfunction of the skin barrier resulting from defects in epithelial differentiation and composition of tight junction proteins, for instance, an immune dysregulation, (neurogenic) inflammation and pruritus. IL-36γ is an IL-1 family member found to be upregulated in psoriatic skin lesions, and has recently been associated with AD, in particular by affecting skin barrier function. To further investigate this IL-36γ attributed function, we evaluated its underlying mechanism in skin barrier impairment using models of human differentiated primary keratinocytes (HNK) in-vitro (2D model) and human skin organ culture ex-vivo (3D model) in various read outs including RTCA, qRT-PCR and immunofluorescence analysis. In the 2D model, IL-36γ resulted in the reduction of the skin barrier integrity as monitored by cell impedance over time. qRT-PCR using RNA

## ORAL LECTURE ABSTRACTS (OL)

isolated from IL-36 challenged and differentiated HNKs pointed to a reduction of differentiation markers (filaggrin, keratins 1/10) and tight junction (claudin 1/4) proteins as the basic mechanism of skin barrier impairment. Immunofluorescence staining on skin sections confirmed downregulation of differentiation makers such as filaggrin and tight junction proteins such as claudin1/4 on protein level by IL-36γ. Because IL-36γ triggers the production of various inflammatory markers in HNK, IL-36γ initiated skin barrier disruption might be mediated by downstream cytokines. Taken together, we hypothesize that IL-36γ plays a significant role in the impairment of the skin barrier in patients with AD and might, thus, be a viable target in the therapy of AD in humans.

***P1.5*** *#366*

### INVESTIGATING THE ROLE OF THE FLG2 GENE IN ATOPIC DERMATITIS IN THE SWEDISH POPULATION

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Atopic Dermatitis (AD) is a complex skin disease influenced by genetic and environmental factors. The Filaggrin gene (FLG) is the primary genetic risk factor, with loss-of-function (LoF) mutations mainly in European AD patients, accounting for at least 30 % of AD cases. Variants in the FLG2 gene have also been shown to be associated with AD but are not as thoroughly studied. We recently identified a new missense variant in the FLG2 gene that contributed to AD in Ethiopians and wanted to explore the FLG2 gene in other populations. To evaluate the role of the FLG2 gene in Swedish AD patients starting with the p.S2377X variant. Genotyping of FLG2 variant rs12568784 and FLG mutations in two independent Swedish AD case cohorts (n=539 and n=482). Immunohistochemistry on skin biopsies from AD patients, carriers and non-carriers of the FLG2 variant. Preliminary findings show a strong association between the rs12568784 FLG2 variant and AD in two Swedish cohorts. In the cohorts, 30% and 32% had the FLG2 variant ($p = 2 \times 10 - 8$ and $2 \times 10 - 11$ ), and 18% and 21% were carriers of the three known LoF FLG mutations (p.R501X, p.R2447X, or p.2282del4). Overall, 44% in cohort 1 (n=539) and 54% in cohort 2 (n=482) of AD patients had at least one variant in either FLG or FLG2 genes (few patients carry both FLG and FLG2 variants). Furthermore, immunostaining revealed reduced FLG2 protein expression in patients carrying the FLG2 variant compared to non-carriers. Ongoing analysis evaluates the association between FLG2 variant status and AD phenotype, severity, other atopic manifestations, and response to systemic AD treatments. FLG2 gene potentially plays a role in the etiology of AD in the Swedish population. Further research is ongoing. Understanding AD genetics may improve treatments and personalized care strategies.

***P1.6*** *#357*

### THE MICROBIOME IN INFLAMMATORY SKIN DISORDERS: THE INNER WORKINGS OF THE OUTER SURFACE

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This research paper reviews the role of the microbiome in AD and therapeutic potential microbiome therapies. The skin microbiome is an area of increasing research interest and the advances in our understanding of skin resident bacteria has raised the intriguing possibility of therapeutic manipulation of the microbiome for the treatment of atopic dermatitis. Review evidence. Define terminology. Characterise microbiome. Describe microbiome diversity. Determine dysbiosis' role in pathogenesis of AD. Define relation of gut with skin microbiome through axis. Analyse therapeutic potential of microbiome treatment modalities in altering the microbiome, treating, and preventing AD. Theoretical study in systematic review of the academic literature involving critical appraisal of qualitative data. Majority of sources are from articles in academic journals through extended literature review and selection strategy critically reviewing the research paper. PubMed based review of the English language literature performed. Atopic dermatitis' microbiome and genomic microbiota, including details of Staphylococcus aureus factors, the gut skin brain axis, and bacteriotherapy. We now have some understanding of the crosstalk revolving around the human body by which the interplay between the microbiome, gastrointestinal tract, immune system, and dermatological organ perform. We can appreciate the confounding factors involved which may affect microbe and host function, including our behaviours, environment, and genes, and how we acquire potentially reversible phenotypical alterations. The influence of microbial agents on the pathogenesis of disease has been illustrated, as well as the function of the skin microbiome plays on our evolvement and its diversification. The role of bacteriotherapy's function.

***P1.7*** *#538*

### CROSS-SECTIONAL ANALYSIS OF TOPICAL AND SYSTEMIC THERAPEUTICS AND THEIR INFLUENCE ON THE SKIN MICROBIOME IN PATIENTS WITH ATOPIC DERMATITIS

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Recent advances in the treatment of atopic dermatitis (AD) have raised new questions concerning the relationship between skin microbes and the host immune system. However whether immunomodulatory treatment directly impacts the skin microbiome or rather acts indirectly through ameliorating the inflammatory skin condition remains to be elucidated. The objective of our study was to investigate if topical and systemic immune modulation is associated with differences in the skin microbiome of patients with atopic dermatitis. As part of the ProRaD longitudinal multicentre study 464 AD patients were examined along with their medication data and 1077 skin microbiome swabs were analyzed. Our findings confirm a strong correlation between the severity of AD and the relative abundance of Staphylococcus aureus in atopic skin lesions. Furthermore, we found moderately affected AD patients undergoing systemic treatment to exhibit lower carriage of S. aureus compared to those receiving topical treatment only. Especially, patients treated with dupilumab was associated with a reduced frequency of S. aureus compared to those undergoing conventional systemic immunosuppressive therapy. In summary, our pilot study sheds light on the intricate relationship between AD severity and skin microbial imbalance, emphasizing the impact of targeted immunomodulatory treatments on the immunological-microbial interplay at the skin barrier in atopic dermatitis.

### P1.8#762
## SENSITIZATION TO MITES AND COCKROACHES IS HIGHLY PREDOMINANT IN ATOPIC DERMATITIS PATIENTS IN NIGERIA - A PILOT STUDY FROM LAGOS

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Atopic dermatitis (AD) is associated with IgE-mediated sensitization to food allergens (FA) and other inhalant allergens. Prophylactic & therapeutic management tailored to the environment is needed. We sought to explore the association between allergic sensitizations and AD in a Nigerian cohort. Thirty-four (34) AD patients in the Lagos University Teaching Hospital Dermatology clinic with 9 healthy controls (HC) were seen. Clinical & phenotypic data obtained with a questionnaire; SCORAD for disease severity and blood samples collected from all. Sensitization patterns were evaluated with ALEX2® Allergy Explorer, analysing total IgE & 301 specific IgE levels. 34 AD (F: M = 59 %: 41%), mean age=16.8 years and 9 HC (F: M = 67 %: 33%) mean age = 29.3 years were seen. Mean SCORAD = 27.5. Among AD patients, 24; 70.6% reported asthma; 20; 58.8% allergic conjunctivitis and 12; 35.3% had allergic rhinitis. Total IgE was higher in AD (mean 584: 122 kU/l)). Sensitizations to mites/cockroach allergens were most seen: 16 patients were sensitized to Der f 2 /Der p 2; Blo t 5 (n=15); Der p 21/ Der p 23 (n=14); Blo t 21/ Gly d 2/ Tyr p/Tyr p2 (n=13); Der f 1/ Lep d 2 (n=12); Aca s / Der p 1 (n=11) and Der p 5 (n=1). A few were sensitized to allergens of edible insects (Ten m, Loc m) and Mouse (Mus m 1) – typical for tropical settings. No sensitization to major food allergens as cow milk, wheat, soy, fish or peanuts; or the common pollens, moulds and pets. Sensitization to tropomyosin was rare. Sensitization to mites/cockroaches but no other allergens in the ALEX2® panel is common in AD in this Nigerian cohort. These IgE-mediated sensitizations might be relevant in AD patients and associated inhalant allergic diseases. The molecular sensitization patterns differ substantially from data from the Northern Hemisphere, with predominant Der f 2 / Der p 2 allergens.

### P1.9#369
## DIFFERENTIAL EXPRESSION OF ANTIMICROBIAL PEPTIDES IN SCALP DERMATITIS AMONG PATIENTS WITH ATOPIC DERMATITIS

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Antimicrobial peptides (AMPs) are crucial for the innate immune system's defense against pathogens. Patients with atopic dermatitis (AD) often show altered AMP expression, increasing their susceptibility to infections and inflammation. The expression levels of AMPs in the scalp skin of AD patients remain undetermined. The aim of this study is to determine the expression levels of various AMPs, including calprotectin, lipocalin 2, human beta-defensin 3, RNase 7, and cathelicidin antimicrobial peptide (CAMP), in the lesional scalp of AD patients in comparison with non-lesional scalp of AD patients and healthy controls (HCs). Additionally, study examines potential factors associated with the expression of these AMPs. The study included 26 AD patients and 18 healthy controls. Scalp skin samples were collected using minimally invasive tape stripping, and AMP expression was assessed via enzyme-linked immunosorbent assay (ELISA). Scalp bacterial microbiota of both groups were analyzed using 16S rRNA gene sequencing. The study also explored correlations between AMP expression levels, clinical factors, and scalp microbiota. Expression levels of calprotectin and lipocalin 2 were increased in AD lesional scalp skin when compared with non-lesional scalp skin and HCs, respectively. Notably, the increased expression of calprotectin correlates positively with the severity of scalp dermatitis in AD, while it inversely correlates with the relative abundance of Cutibacterium in the scalp of AD patients. The study reveals significant changes in AMP expression, especially calprotectin and lipocalin 2, in the lesional scalp skin of AD patients compared to non-lesional and healthy controls. These results suggest that AMP expression may influence the pathophysiology of scalp dermatitis in AD and could serve as potential biomarkers or therapeutic targets.

### P1.10#763
## DISTINCT TRANSCRIPTOMIC PROFILES OF SENSORY NEURONS IN MOUSE MODEL OF ATOPIC DERMATITIS AND PSORIASIS: INSIGHT INTO THE MECHANISM OF CHRONIC ITCH IN ATOPIC DERMATITIS AND PSORIASIS

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Atopic dermatitis (AD) and psoriasis are common inflammatory skin diseases. Both diseases show distinct clinical features and are driven by different immune signatures, but share some immune and barrier abnormalities. Chronic itch is a central feature of AD, but it is also the common reported symptom in psoriasis patients. Itch signal is transduced by specialized sensory neurons. We wanted to address the neuronal changes in AD and psoriasis. We profiled the transcriptional changes in sensory neurons in mouse model of AD and psoriasis. Trigeminal ganglion (TGs) obtained in the MC903 AD model and IMQ-induced psoriasis model (n=10 each), were subjected to RNA sequencing. Biomarkers were validated by qRT-PCR. Among the 1,982 differentially expressed genes, 371 and 731 genes differentially expressed in AD and psoriasis mouse TGs versus TGs of their vehicle controls, respectively. TGs from AD and psoriasis model shared increases in levels of excitability of sensory neurons. TRPM7 was upregulated in TGs from both mice, while TRPC5 was increased only in MC903-treated mouse and TRPA1 and TRPC1 were upregulated only in IMQ-treated mouse. Mrgprb4 was upregulated in both MC903-and IMQ-treated mice. Cysltr1, Il31ra, Htr2a, Nppb, Nts, and somatostatin receptor 1, which are expressed in NP3 neurons were upregulated only in MC903-treated mouse, while psoriatic TGs showed high levels of CGRP genes. Atopic TGs showed upregulated Cxcl14, IL-33, IL-5, and eosinophil activation marker, contrary, psoriatic TGs showed an upregulation of genes within several immune axes, including Th2, Th17 (lipocalin 2), and Th22 (S100A proteins) along with upregulated markers of neutrophils, myeloid leukocyte, and dendritic cells. This transcriptomic analysis will lead to an increased understanding of the mechanisms of chronic pruritus and neuroinflammation in AD and psoriasis.

### P1.11#770
## THE EXPRESSION OF INTERLEUKIN-37 IN THE SKIN OF ATOPIC DERMATITIS PATIENTS

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Atopic dermatitis (AD) is a prevalent dermatological disorder, with its pathogenesis characterized by a complex interplay of immune system dysregulation, epidermal barrier dysfunction, and dysregulation of the skin microbiome. IL-37 appears to might play a role in the pathogenesis of atopic dermatitis and its comorbiditis. The aim of the study is to evaluate IL-37 expression in both lesional and non-lesional skin of patients with AD. The pilot group included 19 patients with AD and 9 age and gender matched patients without a history of AD. In AD patients 10 consecutive tape strips were obtained from lesional skin as well as from adjacent non-lesional skin. RNA was isolated from skin tape strips using real-time PCR. Quantitative real-time PCR was used to analyze the relative gene expression of IL-37. Among AD patients, IL-37 expression was significantly upregulated in both lesional ($p = 0.0019$) and non-lesional skin ($p = 0.0034$) compared to healthy control. The positive trend was observed between hypertension arterillis amongst AD patients and elevated IL-37 mRNA levels, however it was not statistically significant ($p=0.45$). IL-37 appears to might play a role in the pathogenesis of atopic dermatitis and may offer a promising direction for the development of targeted therapies. The role of IL-37 in AD comorbidities development need further studies.

### *P1.12*[#761]

### EFFECT OF A SKIN PH REDUCING EMOLLIENT ON THE SKIN MICROBIOME IN THE CONTEXT OF ATOPIC DERMATITIS

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Atopic dermatitis (AD) is an inflammatory skin disorder characterized by disrupted skin barrier, increased skin pH and Staphylococcus aureus abundance. The complex interaction between skin pH and microbiome is not yet fully understood. The objective of this study was to investigate the ability of a verum-emollient to reduce the skin pH and influence the skin microbiome. A double-blind, placebo-controlled study was performed with 29 individuals suffering from AD flares on contralateral bodysides. Flares were treated locally with corticosteroids until a SCORAD <15 was reached. Afterwards, participants applied the verum and a placebo emollient twice daily for six weeks on opposite bodysides, followed by verum application for four weeks. In total, six visits took place before, during and after the emollient-comparison phase. At each visit, clinical, skin physiological and skin microbiome data was collected. Furthermore, S. aureus isolates were cultivated in buffered medium in a pH range from 5.5 to 8.0 in vitro. Pre-treatment pH values ranged from 4.68 to 6.77 with an inverse correlation between skin pH and hydration at baseline. Both emollients successfully increased skin hydration compared to baseline, but the verum significantly decreased the skin pH compared to placebo. While in vitro the pH significantly influenced S. aureus growth, there was no clear association between skin pH and S. aureus relative abundance on the baseline of the study. Furthermore, the verum-induced reduction in pH had no significant influence on S. aureus and the microbiome composition during the emollient-comparison phase. While the emollient positively modulated the skin barrier, the pH reduction via the verum did not alter the microbiome compared to placebo, suggesting that solely the change in microenvironment is insufficient in re-balancing the skin microbiome in AD.

### *P1.13*[#452]

### THE CORRELATION BETWEEN EASI SCORE AND MULTIPLE ALLERGEN SIMULTANEOUS TEST (MAST) RESULTS IN ATOPIC DERMATITIS PATIENTS

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Eczema area and severity index (EASI) score is a widely used method to evaluate the severity of atopic dermatitis. It is known that serum IgE is associated with severity in atopic patients. Multiple allergen simultaneous test (MAST) is a good method to measure allergen-specific IgE level, and can evaluate the degree of response to allergens. To investigate the correlation between the EASI score, total IgE and allergen specific IgE in adult atopic patients. Patients over 13 years of age with atopic dermatitis who underwent MAST were included retrospectively. MAST consisted of 19 inhalant-allergen and 42 food-allergen panels. For each allergen, all classes of 1 or more were judged as positive. : 131 patients (82 males and 49 females; mean age 32.3 ± 14.1 years) were enrolled. Of these, 57 patients were subjected to EASI scoring. Total IgE was measured from 4.04 up to 5000kU/L. The most common inhalant allergens were D.farinae (67.9%), D.pteronyssinus (67.1%), and Housedust (61.1%), and food allergens were Peach (18.3%), Apple (15.3%), Garlic (12.2%) in order. Total IgE and the number of specific IgE positives were statistically correlated. ($p<0.05$) The EASI score had a statistically positive correlation with both total IgE and the number of specific IgE positivity. ($p<0.05$) EASI score, total IgE and number of positive allergen-specific IgE measured by MAST in adolescent and adult atopic patients all have a significant positive correlation with each other.

### *P1.14*[#362]

### DELAYED BLANCH PHENOMENON TO ACETYLCHOLINE AND ITS ASSOCIATION WITH SWEATING FUNCTION IN ATOPIC DERMATITIS: A CASE STUDY

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The pharmacological abnormality of vascular reactions in atopic dermatitis, known as the delayed blanch phenomenon to acetylcholine, is well recognized. When acetylcholine is administered to the skin of atopic dermatitis patients, the area turns pale after 2-3 minutes and this condition persists for 15-30 minutes. Acetylcholine is also known as a neurotransmitter that induces sweating, but the relationship between the delayed blanch phenomenon and sweating function is not well understood. We evaluated sweating using the axon reflex sweating test on a 20-year-old male patient with atopic dermatitis who presented with decreased sweating. In this evaluation, a blanch phenomenon was observed at the site where acetylcholine was introduced via iontophoresis, and urticarial papules indicative of cholinergic urticaria were observed around the area. The sweating amount was 1.456 mg/cm²/5 min (normal: >0.5), indicating sufficient sweating function, and it was determined that the patient's perceived decrease in sweating was due to inadequate acclimatization to heat. The delayed blanch phenomenon to acetylcholine is thought to be due to strong edema occurring alongside increased blood flow in the same area. Since

there are few cases comparing this with sweating, the purpose of this presentation is to review and discuss the acetylcholine responsiveness in atopic dermatitis.

***P1.15*#372**

### GENETIC AND CLINICAL CHARACTERISTICS OF SEVERE ATOPIC DERMATITIS IN KOREAN

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With the rising number of patients with atopic dermatitis (AD) in Korea, severe AD cases have also increased. Although research exists on general AD, studies on severe AD characteristics and immunologic features are limited, necessitating detailed investigations for clinical dicisions. This study aimed to describe the baseline characteristics of adults with severe AD in Korea and investigate the unique immunologic features through gene analysis of skin biopsies. A retrospective chart review of 108 patients (≥18 years) with severe AD [eczema area severity index (EASI) > 23] was conducted at a single institution. Clinical assessments included EASI, POEM, pruritus NRS, and DLQI. Laboratory studies included total eosinophil count, IgE, MAST, LDH, uric acid, lipid profile, CRP, and ESR. Skin biopsies from 13 severe AD patients were analyzed using 10X genomics 5' single-cell RNA sequencing to identify immunologic features, compared with public healthy control data. The predilection sites were the head and trunk. Erythema and lichenification were significant clinical signs. Mean POEM and pruritus NRS scores were 23.8 and 8.1, respectively, and mean DLQI was 22.0. Abnormal findings included elevated IgE (85.2%) and eosinophil count (70.4%). Frequent comorbidities were allergic rhinitis (50.8%) and asthma (18.5%). Dupilumab was the predominant treatment (98.1%). Gene analysis showed elevated IL-22 and related genes, alongside the known involvement of type 2 interleukins such as IL-4, IL-5, and IL-13 in severe AD patients compared to healthy controls. This study provides an overview of severe AD in Korean adults, highlighting the disease burden and frequent use of dupilumab. The gene analysis indicates IL-22 is critical in severe AD's immunologic features, offering insights for future therapies.

## P2. Immunity dysregulation

***P2.1*#772**

### CONTACT ALLERGY TO METALS IN PATIENTS WITH ATOPIC DERMATITIS

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Atopic dermatitis (AD) and allergic contact dermatitis (ACD) are common dermatological conditions with a steadily increasing incidence. Metals remain potent haptens with considerable allergenic potential. Immunological discrepancies typical of patients with AD may contribute to variations in the manifestation of contact allergies in this specific patient group. The objective of this presentation is to highlight contact allergies to metals in patients with AD, with a specific focus on distinct disease endotypes, incorporating patient age and disease severity. The study cohort included patients under the care of the dermatology outpatient clinic at the University Clinical Center in Gdańsk, evaluated between 2020 and 2024. The diagnosis of contact allergies was based on the interpretation of the Polish baseline patch test series, with a particular emphasis on metal allergens, including chromium, nickel, palladium, and cobalt. Of the 652 patients with ACD, 149 were simultaneously diagnosed with AD. Metals were the most frequent allergens across both AD patients and non-AD patients. Nickel accounted for 36% of allergic reactions in the AD cohort and 39% in the non-AD cohort. No statistically significant differences were observed in the pediatric population. However, in adult AD patients, allergies to both chromium and nickel were significantly more frequent compared to non-AD patients ($p=0.00064$ and $p=0.021$, respectively). Furthermore, in both pediatric and adult groups, no statistically significant associations were observed between AD severity and the risk of developing contact allergies to metals. The unique immunological profile observed in adult patients with chronic AD may predispose them to an increased risk of contact allergies, particularly to metals such as chromium and nickel.

## P3. Primary Prevention and Comorbidities

***P3.1*#463**

### COEXISTENCE OF ATOPIC DERMATITIS AND ALOPECIA AREATA: EFFICACY OF CLASSIC IMMUNOSUPPRESSIVE TREATMENT AND MODERN BIOLOGICAL AND SMALL MOLECULE TREATMENT - PRESENTATION OF TWO CLINICAL CASES

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Atopic dermatitis (AD), a type II inflammatory skin disease, is the most common allergic skin disease in children population. Pathogenesis of AD mainly includes IgE-mediated hypersensitivity response, skin barrier dysfunction and the role of environmental factors. AD may be associated with variety of immune diseases such as alopecia areata (AA), vitiligo or psoriasis, which may affect quality of life, social relations, choice of occupation, hobbies and sports activities. AA, non-scarring alopecia, is a chronic immune-mediated, a type I inflammatory disease. Some studies suggest that type II immunity may play a role in the development of AA in patients with exogenous AD. Analysis of AA skin biopsy revealed increased gene expression associated with Th2 immune response with increased IL-13 serum level. More over filaggrin gene mutation is risk factor for AD and AA severity. Drugs used in the treatment of AD among others are cyclosporine, medicines and Janus kinase inhibitors. We present two patients with coexistence of AD and AA. We assessed the severity of diseases using EASI, DLQI, SALT and trichoscopy. One patient was successfully treated with classical immunosupresant therapy with cyclosprin. We observed improvement in the skin lesions and regrowth of hair with poliosis. The second patient was treated with cyclosporin with slight AD improvement, without hair regrowth. Regrowth of hair and clearance in the skin lesions was observed after baricitynib therapy. Based on the literature published so far, the prevalence of AD in AA patients and of AA in AD patients and confirmed that both patients with AA have a higher prevalence of AD and patients with AD have a higher prevalence of AA. In patients with coexisting AA and AD, clinical improvement was observed, in some patients, after treatment with cyclosporine, dupilumab and baricitinib.

## P4. Pruritus and AD

***P4.3*#661**

### EXPLORING THE LINK BETWEEN MIND AND SKIN: UNDERSTANDING THE NEUROCUTANEOUS AXIS IN ATOPIC DERMATITIS

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Atopic dermatitis (AD), also known as eczema/atopic eczema, is a significant health burden, resulting in chronic T-helper 2-mediated inflammation and pruritus skin. AD patients also suffer from various comorbidities such as food and respiratory allergies, sleep disorders and neuropsychiatric conditions, which can have long-term consequences, thus further increasing the health burden of AD. The combination of chronic skin inflammation and pruritus aggravate scratching behaviour. Severe itching-scratching behaviour at night could lead to sleep disruptions in AD patients. Poor sleep quality during early childhood could severely alter neurodevelopment, contributing to the increased risk of neuropsychological conditions seen in AD sufferers, such as attention deficit hyperactivity disorder, anxiety and depression. In this study, we aim to unveil the complex relationships between inflammation, sleep, brain structure, functional connectivity and cognitive functions in AD patients. We will recruit a cohort of adolescents, aged 12-18 years old, to participate in this study. The participants will be separated into 3 groups based on their AD severity: Group 1 - severe AD, Group 2 - mild-to-moderate AD, and Group 3 - healthy controls. All participants will undergo a series of assessments to collect data regarding their skin barrier functions, cutaneous and systemic inflammation, sleep quality, brain structure and activity as well as cognitive functions. In conclusion, this is a multidisciplinary approach to collect a large and diverse dataset, which can be used to improve AD patient stratification and investigate the underlying pathogenesis of various comorbidities suffered by AD patients. We anticipate results from this study will be able to drive the development of new therapy approaches to improve the quality of life of AD patients.

### *P4.4*[#420]

## ATOPIC DERMATITIS MASKED BY SCABIES, VASCULITIS, CHOLESTATIC PRURITUS: A DIAGNOSTIC CHALLENGE

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Atopic dermatitis (AD) is a chronic inflammatory skin condition characterized by intense chronic relapsing pruritus. Diagnosing AD can be challenging when masked by other pruritic conditions such as scabies, vasculitis, and cholestatic pruritus. To emphasize the diagnostic challenges and complexities encountered in identifying atopic dermatitis (AD) when it coexists with other pruritic conditions. This case underscores the complexity of diagnosing atopic dermatitis in the presence of other pruritic conditions such as scabies, vasculitis, and cholestatic pruritus. A 64-year-old male with a history of asthma and atopic dermatitis presented with a six-month history of severe pruritus and widespread eczematous lesions, affecting his sleep and daily activities (Itch score 10/10). Physical examination showed generalized papulo-vesicles forming plaques and petechial lesions on his lower legs. Skin scrapings identified scabies mites, and he was treated with ivermectin and permethrin cream, but the pruritus persisted. A skin biopsy from the petechial lesion showed leukocytoclastic vasculitis, thus patient was treated with oral prednisolone, Additionally, chronic alcoholism resulted in elevated liver function tests and bile acids, with imaging confirming hepatic cirrhosis. He was treated with ursodeoxycholic acid and cholestyramine. Despite these treatments, the patient continued to experience persistent eczematous lesions and pruritis. A re-evaluation of his case, considering his past medical history and characteristic lesions, confirmed a concurrent diagnosis of atopic dermatitis. Treatment with topical corticosteroids and dupilumab injections led to significant improvement.

### *P4.5*[#409]

## COMPARISON OF DIFFERENT SKINCARE REGIMENS FOR PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS IN ADDITION TO SYSTEMIC TREATMENT: RESULTS OF A MULTICENTER RANDOMIZED CONTROLLED TRIAL

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Moderate-to-severe (MTS) atopic dermatitis (AD) can be managed by systemic treatment such as Dupilumab. Current AD management guidelines recommend emollients and eudermic cleansers to improve the epidermal barrier and provide anti-irritant and anti-pruritic effects. The studied Emollient '+' was designed not only to improve the physical skin barrier, but also to rebalance the skin microbiome. To investigate the efficacy of a skincare regimen with an emollient '+' compared to a routine skincare, in adjunct to Dupilumab. In a randomized controlled multicenter study, patients with MTS AD receiving Dupilumab were randomized 1:1 to apply twice daily for 10 weeks Emollient '+' after pre-cleasning with the corresponding syndet (Emollient '+' group) or to continue with their usual emollient and cleanser (Control group). Assessments included SCORAD, pruritus on a Visual Analog Scale, quality of life (QoL) questionnaire (DLQI), efficacy and tolerance questionnaires. 44 adults were randomized into the two groups. After 10 weeks of treatment, pruritus was significantly improved in the Emollient+ group compared to Control group. The impact on QoL aspects like working or doing sports was also further reduced in patients under Emollient '+'. Interestingly, patients under Emollient '+' used less emollient balm compared to Control. In patients with MTS AD treated with Dupilumab, adjunctive skincare with Emollient '+' signifi-

cantly improves pruritus symptoms and QoL aspects compared to routine skincare.

### *P4.6*[#306]

## NIGHTTIME ITCH AND SLEEP DISTURBANCES ASSOCIATED WITH ATOPIC DERMATITIS: ABROCITINIB EFFICACY IN ALL-RUSSIAN REGISTRY OF ATOPIC DERMATITIS

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Itch and sleep disturbance are among the most burdensome effects of atopic dermatitis (AD). Abrocitinib is once daily, oral JAK1 inhibitors that block IL-4 and IL-13, cytokines involved in the pathogenesis of AD and itching We evaluated the effect of abrocitinib on AD-related nighttime itch and sleep disturbance among patients receiving abrocitinib 100 mg (n=103) and 200 mg (n=52) in combination with topical therapy using data from all-Russian registry of patients aged ≥12 years starting commercially available abrocitinib therapy for moderates to severe AD (M2SAD). 155 patients were enrolled including 42 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). Patients rated their worst nighttime itch from "no itch" (0) to "worst imaginable itch" (10) and sleep disturbance from "not at all" (0) to "extremely" (10). Outcomes included proportions of time (in days) patients experienced a ≥4-point improvement from baseline or score of 0/1 during follow-up. Patients receiving abrocitinib had high mean proportions of time with nighttime itch improvements ≥4 from baseline over 4 weeks (abrocitinib 100 mg - 37.9%; abrocitinib 200 mg 50.0%) and 12 weeks (abrocitinib 100 mg -50.5%; abrocitinib 200 mg - 63.4%); similar results were observed for sleep disturbance improvements over 4 weeks (abrocitinib 100 mg -39.0%; abrocitinib 200 mg -48.1%) and 12 weeks (abrocitinib 100 mg -50.5%; abrocitinib 200 mg -57.7%). Proportions of time patients achieved a score of 0/1 were high for nighttime itch in 25.3% of patients with abrocitinib 100 mg and 38.4% of patients with abrocitinib 200 mg, and in 39.0% of patients with abrocitinib 100 mg and 53.8% of patients with abrocitinib 200 mg at weeks 4 and 12 respectively. Abrocitinib in combination with topical therapy quickly reduces nighttime itch and improves night sleep in patients with M2SAD

### *P4.7*[#322]

## TOPICAL CORTICOSTEROID PHOBIA AMONG CAREGIVERS OF CHILDREN WITH ATOPIC DERMATITIS: A CROSS-SECTIONAL STUDY USING TOPICOP SCORE IN SAUDI ARABIA

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Atopic dermatitis (AD) is a chronic skin disorder that affects 10–25% of children worldwide and has a negative effect on life expectancy. Our study fills a vacuum in validated evaluations of corticosteroid fear by utilizing the TOPICOP questionnaire to evaluate knowledge and attitudes regarding the use of corticosteroids among Saudi caregivers of children with AD. To evaluate the knowledge and attitude of corticosteroid use among caretakers of children with atopic dermatitis in Saudi Arabia by using the TOPICOP validated questionnaire. It is a cross-sectional study conducted in Saudi Arabia in 2023 that aims to assess knowledge and attitudes regarding corticosteroid use among caregivers of children with atopic dermatitis using the TOPICOP questionnaire. Data is analyzed by IBM SPSS 29. Our study included 616 participants in Saudi Arabia, predominantly female (56.5%) and Saudi (92.4%). Significant concerns about topical corticosteroids (TCS) include fear of systemic absorption (47.1%) and infections (50.6%). Reasons behind avoiding TCS include common fears, notably skin damage (16.2%). Linear regression identifies the caregiver's health-related profession as a significant predictor of corticosteroid phobia (B=-0.552, p=0.027). Our study revealed prevalent concerns about topical corticosteroids for various reasons for fear. The caregiver's health-related profession emerged as a predictor of corticosteroid phobia.

### *P4.8*[#399]

## COMPARISON OF SKIN TRANSCRIPTOMES FROM BIOPSIES IN PRURIGO PATIENTS WITH AND WITHOUT ATOPIC DERMATITIS

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Prurigo nodularis (PN) is one of the most intensely pruritic chronic skin conditions. It is characterized by symmetrically distributed, widespread, pruritic nodules that occur in patients with chronic itching. Some subsets of patients with PN have an atopic background and history. However, the pathogenesis of PN with atopic dermatitis is poorly understood. The objective of this study is to compare the transcriptomes from skin biopsies of prurigo patients with and without atopic dermatitis, aiming to identify unique gene expression patterns and gain insights into the molecular mechanisms underlying prurigo (NADP and ADP). A total of 16 volunteers were recruited from the Dermatology Department of Hallym University. We performed transcriptome profiling with skin tissue. The results revealed significant differences in DEGs (differentially expressed genes) between healthy individuals and PN patients. GO enrichment results indicated that compared to healthy controls, PN patients showed associations not only with synapse organization in neurological processes related to pruritus but also with epidermis development and keratinocyte differentiation. KEGG pathway analysis results showed that ADP patients had a significant association with inflammatory cytokines compared to healthy controls in normal and NADP, with increased expression of Th2-related cytokines such as IL-4R and IL-13. In addition, the expression of IL-25, IL-33, and TSLP secreted from the epithelium was increased. The functions of genes upregulated in ADP compared to healthy and NADP suggest a connection to neurotransmitters associated with skin itching. These findings provide insights into the molecular mechanisms underlying PN, particularly in the context of atopic dermatitis, highlighting potential therapeutic targets for further investigation.

### *P4.9*[#455]

## PATIENT PERCEIVED CONTROL OF ATOPIC DERMATITIS USING ATOPIC DERMATITIS CONTROL TOOL (ADCT)

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Atopic Dermatitis (AD) is a high-burden disease. The prevalence of AD ranged from 0.98% to 9.2% in studies including pediatric and adult patients A six-item survey questionnaire (ADCT) has recently been developed to assess the control of AD symptoms using subjective patient-based reporting only. This study aimed to investigate the self-reported control on AD using the ADCT evaluation tool. 100 patients completed a baseline survey using ADCT to assess the AD control status. it has 6 items(0-4)with max. 24 points. The ADCT allows for the patients' self-assessment of AD control based on the patient's own perceptions of AD symptoms and impacts on their life and function (e.g. itch, sleep, daily activities, mood, and emotions). A patient's AD was considered not being well controlled with an ADCT total score of ≥ 7points. Itch severity was assessed using NRS11 as well as SCORAD score. This cross-sectional, observational study included 100 patients (82 adults, 18 adolescents) with AD (mean age of adults: 32.28±4.89 years, adolescents: 14.8±2.6).Majority (40.8%) were with severe AD,39.8% with moderate and 19.4% presented with mild AD. Mean itch score was 8.05. Majority (92%)of the subjects had a total ADCT score of ≥7 signifying an uncontrolled disease status. The ADCT mean score was 16.58. Notably, patients with an uncontrolled AD demonstrated elevated scores in each of the six ADCT items ; reporting elevated frequency of intense episodes of itching (3.12/4), extent of AD-related bother (3.02/4), above average frequency of sleep difficulties (2.46/4) as well as impact of AD on daily activities (2.27/4), for instance. Pearson correlation indicated that ADCT and SCORAD have a significant positive relationship (r(96) = .28, p = .005). ADCT is a promising tool for the early detection of loss of disease control in patients with AD in the population of Qatar.

### *P4.10#446*

## OPTIMAL ITCH RESPONSE WITH DUPILUMAB IN ADULT PATIENTS WITH MODERATE-TO-SEVERE AD

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The treat-to-target framework helps guide treatment decisions in clinical practice by proposing that 1 or more optimal targets for the disease domains (i.e. signs, symptoms, or quality of life [QoL]) should be achieved after 6 months of treatment. To evaluate the proportion of patients with optimal response in itch, with or without optimal response in signs as measured by Eczema Area and Severity Index (EASI) after 6 months and 1 year of treatment with dupilumab. In the LIBERTY AD CHRONOS study (NCT02260986), adults with moderate-to-severe atopic dermatitis (AD) who received dupilumab 300 mg with topical corticosteroids every 2 weeks were assessed for optimal itch response (Peak Pruritus Numeric Rating Scale [PP-NRS] ≤4) and optimal EASI response (EASI ≤7), as defined by the treat-to-target framework. Optimal itch response was further confirmed by SCORing Atopic dermatitis itch Visual Analog Scale, [SCORAD Pruritus VAS] <4). Most patients had optimal itch response (PP-NRS ≤4) irrespective of EASI outcome at Week 24 (76.7%) as defined by the treat-to-target framework, which was further sustained at Week 52 (81.1%). Few patients had optimal EASI response without optimal itch response at Weeks 24 (12.2%) and 52 (8.9%). These results were further confirmed when using SCORAD Pruritus VAS <4 as an optimal itch response target, yielding similar or even better outcomes. Most patients treated with dupilumab had optimal itch response at 6 months, sustained for up to 1 year.

### *P4.11#335*

## IMPROVEMENTS IN ITCH AND SLEEP DISTURBANCE ARE MAINTAINED UP TO WEEK 48 WITH NEMOLIZUMAB PLUS TCS/TCI TREATMENT IN PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS: RESULTS FROM TWO GLOBAL PHASE 3 PIVOTAL STUDIES (ARCADIA 1 AND ARCADIA 2)

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Two global phase 3 studies (ARCADIA 1 & 2) showed significant improvements in itch & sleep at Week (W) 16, which were maintained up to W48, with nemolizumab+topical corticosteroids (TCS) and/or topical calcineurin inhibitors (TCI) treatment in patients with moderate-to-severe (MtS) atopic dermatitis (AD). To evaluate nemolizumab efficacy in maintaining itch & sleep responses (using SCORing Atopic Dermatitis Visual Analog Scale [SCORAD VAS]) & improvements in quality of life (QoL; using Dermatology Quality Life Index [DLQI]) over 48 weeks in patients with MtS AD who were responders to nemolizumab+TCS/TCI treatment. We analyzed 32-week maintenance data pooled from ARCADIA 1 & 2 (double-blinded phase 3 studies). Clinical responders (Investigator's Global Assessment score 0/1 or ≥75% improvement in Eczema Area & Severity Index at W16) were re-randomized (1:1:1) to nemolizumab 30mg every 4 weeks (nemolizumab-Q4W), every 8 weeks (nemolizumab-Q8W), or placebo Q4W (nemolizumab-withdrawal) subcutaneously arms, all with TCS &/or TCI up to W48. At W48, response rates for ≥4-point improvement in SCORAD VAS Pruritus & VAS Sleep were maintained in nemolizumab-Q4W (72.8%, p<0.0001 & 61.5%, p<0.001) & -Q8W (66.9%, p≤0.001 & 56.2%, p<0.05) vs placebo (49.1% & 43.2%) arms. Response rates for ≥75% improvement in SCORAD VAS Pruritus & VAS Sleep were

also maintained in nemolizumab-Q4W (63.3%, p<0.0001 & 60.4%, p<0.01) & -Q8W (58.6%, p<0.0001 & 56.8%, p<0.05) vs placebo (37.3% & 43.8%) arms at W48. At W48, DLQI score 0/1 was achieved by 36.7% (nemolizumab-Q4W), 40.8% (nemolizumab-Q8W) & 27.2% (placebo) of patients. Patients achieving clinical response at W16 had also maintained improvements in itch, sleep disturbance & QoL with nemolizumab+TCS and/or TCI treatment at W48. The Q8W regimen was similar to the Q4W one in maintaining itch & sleep response rates.

***P4.12*** *#434*

### A TOPICAL CHINESE HERBAL INHIBITS PRURITUS AND SKIN INFLAMMATION VIA NEURAL TRMP8 IN ATOPIC DERMATITIS

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Atopic dermatitis (AD) is a chronic, itchy, and inflammatory skin disease. The neuroimmune concept of itch involves aberrant immune responses and neural activities.For years, traditional Chinese medicine has consistently demonstrated its efficacy and safety in alleviating symptoms of AD. Chushizhiyang (CS) ointment is developed based on traditional Chinese herbal components and has demonstrated efficacy in improving skin lesions and itch in patients with eczema. However, the underlying mechanisms are still lacking. We aim to determine whether CS ointment exhibited greater efficacy in mitigating skin inflammation, blood vessel dilation, and itch scratching. To induce AD-like dermatitis in mice, 2 nmol of MC903 (calcipotriol) in 10 µL 100% ethanol was tropically applied to the ear skin for 8 days.A single dose on day 11 to induce flare-ups.CS and hydrocortisone, each substance (20 mg) was applied to the ear skin twice daily from day 8 to day 14. By employing a murine model of AD-like disease, we found that CS ointment can reduce the thickness of the skin, decrease scratching behavior, downregulate type 2 cytokines, and inhibit skin flash. Importantly, its ability to relieve itching is greater than that of topical steroid therapy. The RNA-sequencing analysis of the affected skin revealed that the differentially expressed genes were enriched in neuroactive pathways involving ion channels. Calcium imaging demonstrated that CS ointment is capable of activating TRPM8-positive sensory neurons. Using transgenic animals, we found that CS ointment did not have any anti-inflammatory or anti-pruritic effects on the TRPM8-deficient mice. Additionally, CS treatment reduced neuronal activities in wild-type, rather than TRPM8-compromised animals. Our findings suggest that topical Chinese herbals participate in neuroimmune mechanisms via TRPM8.

## P5. Quality of Life & Comorbidities, Epidemiology

***P5.1*** *#380*

### DUPILUMAB IMPROVES QUALITY OF LIFE IN PATIENTS WITH ATOPIC HAND AND/OR FOOT DERMATITIS

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Hand and hand and foot (H/F) atopic dermatitis (AD) have a substantial negative impact on health-related quality of life (HRQoL). To evaluate the impact of dupilumab therapy on HRQoL measured by the Quality of Life in Hand Eczema Questionnaire (QoLHEQ) overall and by domain for patients with hand or H/F AD. A post hoc analysis of data from LIBERTY-AD-HAFT (NCT04417894). Patients aged ≥12 years with moderate-to-severe atopic hand or H/F dermatitis received dupilumab monotherapy (300 mg [adults] or 200/300 mg [adolescents]), or placebo, every 2 weeks for 16 weeks. The validated QoLHEQ was used to evaluate HRQoL impairment (range 0–117: 0–10 = not at all, 11–39 = slightly, 40–61 = moderately, 62–86 = strongly, and ≥87 = very strongly impaired; minimally important change [MIC] in QoLHEQ = ≥22-point reduction from baseline [BL]). At BL, the 129 patients included (64 dupilumab, 65 placebo) had a mean (SD) QoLHEQ of 70.1 (23.4) and 92.2% of patients reported a score corresponding to "moderately" to "very strongly" impaired QoL. At Week 16, significantly more patients in the dupilumab vs placebo group achieved the MIC (77.8% vs 31.7%, respectively; P < 0.0001), with a significant benefit for dupilumab from Week 2 onwards. Dupilumab vs placebo led to greater improvements in the overall QoLHEQ score from BL to Week 16 (71.9 to 29.8 vs 68.4 to 53.9; P < 0.0001, respectively) and a numerically greater proportion of patients reported scores corresponding to "not at all/slightly" at Week 16 (67.2% vs 36.9%, respectively). Similar results were seen in the QoLHEQ domains (Symptoms, Emotions, Functioning, Treatment/Prevention). Safety was consistent with the known dupilumab safety profile. In patients with moderate-to-severe hand or hand and foot AD, treatment with dupilumab for 16 weeks provided significant and clinically meaningful improvements in HRQoL.

***P5.2*** *#355*

### UNDERSTANDING THE PATIENT'S PERCEPTION: WHICH EASI THRESHOLD IS CLINICALLY MEANINGFUL TO PATIENTS WITH ATOPIC DERMATITIS?

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Achieving clinically meaningful treatment goals in managing moderate-to-severe atopic dermatitis (AD) is crucial, as AD is a chronic inflammatory disease that significantly impacts patients' quality of life. However, it remains unclear which EASI threshold is relevant to patients. We aim to determine the EASI threshold associated with clinically meaningful improvements in patient-reported outcomes (PROs). The 52-week LIBERTY AD CHRONOS (NCT02260986) trial enrolled patients ≥18 years old

with moderate-to-severe AD. Patients treated with dupilumab every 2 weeks and topical corticosteroids were included in this post hoc analysis. Repeated measures regression analysis was used to estimate the relationship between change in EASI and clinically meaningful improvements in PROs from baseline (BL) across multiple visits. Linear regression showed that DLQI ≥4-point improvement (PI), POEM ≥4-PI, SCORAD Pruritus VAS ≥2-PI, Peak Pruritus NRS ≥3-PI, PGADS ≥2-category improvement (CI), and PGATE 2-CI were achieved, respectively, with 81.0%, 41.3%, 52.8%, 88.2%, 60.6%, and 62.1% change in EASI from BL. Logistic regression showed the following probabilities of achieving clinically meaningful improvements in PROs with EASI-50/EASI-75/EASI-90, respectively: DLQI ≥4-PI 0.75/0.84/0.88, POEM ≥4-PI 0.74/0.83/0.87, SCORAD Pruritus VAS ≥2-PI 0.80/0.89/0.92, Peak Pruritus NRS ≥3-PI 0.88/0.95/0.97, PGADS ≥2-CI 0.87/0.95/0.97, and PGATE ≥2-CI 0.86/0.94/0.96. An EASI response between EASI-50 and EASI-75 is associated with clinically meaningful improvements in most PROs, with no substantial difference in the proportion of patients achieving meaningful improvement in AD between EASI-75 and EASI-90. Thus, the co-primary endpoint of phase 3 trials, EASI-75, remains a relevant treatment outcome for patients with AD.

***P5.3*** *#364*

## ANALYSIS OF PATCH TEST RESULTS FOCUSING ON ATOPIC HISTORY IN ROSACEA PATIENTS: A RETROSPECTIVE STUDY

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Atopic history is known to influence various dermatological conditions, including rosacea. Rosacea is a chronic inflammatory disorder primarily affecting the facial regions, characterized by symptoms such as hot sensations, tingling, pruritus, and dryness, along with signs of erythema, papules, pustules, and edema. Limited research exists on the association between rosacea, allergic contact dermatitis, and atopic diseases. The present study aimed to investigate the link between atopic history and patch test results in rosacea patients. We analyzed data from 345 rosacea patients who visited Wonju Severance Christian Hospital between January 2012 and July 2022. The study examined the prevalence of atopic history, patch test results, and positivity rates of specific antigens. The overall positive patch test rate was 72.46%. This rate tended to be higher in patients with a history of atopy compared to those without atopy (odds ratio [OR], 1.720; 95% confidence interval [CI], 0.990~2.987), although the difference was not significant. Notably, cobalt chloride exhibited a significantly increased positivity rate in the atopy subgroup (OR, 1.792; 95% CI, 1.078~2.977). When stratified by subtype, the papulopustular group showed significantly higher positivity rates for cobalt chloride, thimerosal, quinoline mix, and captan compared with the erythematous-telangiectatic group. The present study enhances our understanding of the association between atopic history and patch test results in rosacea patients. Considering the atopic history and performing patch tests to identify sensitized antigens are crucial for effective management and symptom relief in patients with rosacea.

***P5.4*** *#350*

## ATOPIC DERMATITIS IN ETHIOPIAN CHILDREN: A MULTICENTRE STUDY OF CLINICAL SEVERITY, CHARACTERISTICS AND SOCIO-DEMOGRAPHIC FACTORS

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Atopic dermatitis (AD) is a chronic relapsing, pruritic, inflammatory skin disease. Clinical characteristics are known to vary across populations and regions. While AD has been well documented in Caucasian populations, very few studies have been conducted in African patients residing in Africa. This study assessed the clinical characteristics, severity and socio-demographic factors of children with AD in Southern Ethiopia. A hospital based cross-sectional study was conducted among 461 children and their caregivers in 4 randomly selected hospitals from October 2022 to September 2023. A systematic sampling technique was used to enrol participants. Clinical profile and sociodemographic data were collected. Descriptive analysis was done to characterize participants. Univariate and ordinary logistic regression was used to identify factors associated with SCORAD index score. 461 children (46% females, 54% males) with mild (32.3%), moderate (46.2%) and severe (21.5%) AD were recruited, all suffering from itching. Skin dryness, excoriation, erythema followed by lichenification were the most observed signs. Age of disease onset, gender of caregiver or family, family atopy history, mother education status and use of herbal medication were significantly associated with the severity of AD. In this study, 68% of children were found to have moderate-to-severe AD. Independent predictors of AD severity were found but further investigation into these variables to serve as potential markers of severe AD is needed to improve management and care of children with AD in Ethiopia.

***P5.5*** *#441*

## GROWTH ANALYSIS AT BASELINE IN CHILDREN AND ADOLESCENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS ENROLLED IN PHASE 3 DUPILUMAB TRIALS

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Children aged 6−17 years with atopic dermatitis (AD) are at risk for impaired growth from factors including chronic sleep disturbance due to itch, chronic inflammation, and possible side effects from corticosteroids. We assessed the impact of AD on childhood growth by analyzing height, weight, and Body Mass Index (BMI) percentiles of children in comparison to CDC standard percentiles. Height and weight for children aged 6−11 years (severe AD) and 12−17 years (moderate-to-severe AD) enrolled in LIBERTY AD PEDS (NCT03345914) and LIBERTY AD ADOL

(NCT03054428) respectively, were collected at study entry. Data were analyzed by gender and stratified per proportion of patients ± 25th, 30th, 40th, and 50th percentiles for height, weight and BMI. Compared with CDC standards, 6−11-year-old boys with severe AD were overrepresented in the <25th and <50th height percentiles by 9.4% and 7.6% respectively; girls by 9.0% & 4.2% (<25th & <50th; 9.4% & 7.6% in boys [n = 151]; 9.0% & 4.2% in girls [n = 153]). Adolescents with moderate-to-severe AD were also overrepresented in the lower height percentiles (<25th & <50th standards; 13.5% & 10.4% in boys [n = 96]; 0.4% & 4.9% in girls [n = 71]). In contrast, children and adolescents with AD were underrepresented in the lower weight percentiles (<25th & <50th standards; aged 6 – 11 years: −1.2% & −7.6% in boys and −3.4% & -5.6% in girls; aged 12–17 years: -5.2% & -15.6% in boys; 15.1% & 23.2% in girls) and BMI percentages (<25th & <50th standards; aged 6–11 years: −7.8% & −12.9% in boys; −9.3% & −17.3% in girls; aged 12–17 years: −11.5% & −19.8% in boys and −16.5% & −24.6% in girls). Children and adolescents with moderate-to-severe AD had lower stature, and higher weight and BMI compared with CDC national references. Such findings prior to or during puberty may significantly impact biological maturation and final adult height.

### *P5.6#316*

### EPIDEMIOLOGY OF ECZEMAS IN KINSHASA

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Atopic dermatitis, also known as atopic eczema, is a chronic, recurrent inflammatory skin disease characterized by pruritus, xerosis and a close association with IgE-mediated sensitization to inhaled allergens and foods. Over 60% of children with atopic dermatitis may develop allergic rhinitis or asthma. The aim of this study is to describe the epidemiological and clinical aspects of eczema in patients under 18 years of age. The aim of this study is to describe the epidemiological and clinical aspects of eczema in patients under 18 years of age. Retrospective, multicenter study of patients under 18 years of age who underwent outpatient dermatology consultations for eczema in several Kinshasa hospitals: Hôpital Général de Reference de Matete, Clinique Ngaliema, Centre Hospitalier Akram and Victoria Médical Center. Our study covered the period from January 01, 2022 to January 01, 2023. In these hospitals, 874 patients aged 0 to 17 consulted an outpatient clinic for all kinds of skin diseases, including 202 suffering from eczema, a frequency of 23.1%. Male patients accounted for 56% of all cases, The average age was 9.3 years, and 10% of cases had infected lesions, ¾ of patients had previously been managed unsuccessfully by non-dermatologists, The 12 to 17 age group was the most affected, and a history of atopy was found in more than half the cases, 15% of participants had had at least one similar episode in the past, Dermocorticoids and antihistamines were the most commonly prescribed treatments. Eczema is common in children under 18, accounting for 23% of all dermatoses.

### *P5.7#367*

### DISEASE BURDEN AND TREATMENT PREFERENCE FOR MODERATE-TO-SEVERE ATOPIC DERMATITIS IN TAIWAN: A DISCRETE-CHOICE EXPERIMENT

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With the introduction of various new systemic therapeutics for atopic dermatitis (AD), it is important to understand the treatment attributes preferred and valued by AD patients and their caregivers. This study aimed to elicit preferences of AD patients and caregivers for key treatment attributes and willingness-to-pay based on preferred treatment attributes in Taiwan. A cross-sectional, self-administered, online-survey study in Taiwan was conducted between March 2022-July 2023 among 40 adult AD patients (aged ≥ 20 years) and 10 caregivers of teenage AD patients (aged 12-19 years). Final survey items included disease burden, out-of-pocket costs, willingness-to-pay, and assessment of treatment attributes using discrete-choice experiment (DCE). Hierarchical Bayesian logistic regression was used to quantify preferences and relative importance of the attributes. A total of 40 adult patients and 10 caregivers completed the DCE survey with 66% male, mean age of 28.5 (10.2) year-old and 82.0% with severe AD according to physician-rated severity. Most patients (88.0%) had rated ≤40 on the visual analog scale regarding the quality of life due to AD. "Probability of skin clearance" was considered as the top important attribute while choosing advanced AD therapy (RI=43.80 [95% CI: 38.51–49.09]), followed by "Probability of itch reduction" (RI=16.53 [13.48–19.58]), "Risk of severe side effects" (RI=15.88 [12.57–19.19]), and "Route and frequency of administration" (RI=14.69 [10.86–18.52]). The proportion of respondents unwilling to pay decreased from 14.7% to 2.9% with reducing time-to-onset of itch relief and increasing skin clearance probability. AD patients and caregivers in Taiwan placed more value on AD treatment efficacy related to skin clearance and itch reduction than the risks of severe side effects when deciding on AD therapy.

### *P5.8#436*

### IMPACT OF DUPILUMAB TREATMENT ON SEASONAL DISEASE SEVERITY IN ADULTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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Atopic dermatitis (AD) severity varies by geographical location and climate. We examined seasonal trends in AD severity and report the effect of dupilumab treatment on adults with moderate-to-severe AD across seasons. LIBERTY AD CHRONOS (NCT02260986) was a randomized, double-blind, phase 3 trial in adults with moderate-to-severe AD. Patients received dupilumab 300 mg qw, q2w, or placebo qw, with concomitant topical corticosteroids (TCS). This analysis reports the proportion of patients per severity category of SCORAD score (range 0–103) by season for 1 year across Northern Hemisphere countries (10 in North America & Europe [NA&E]; 2 in Asia-Pacific [APAC]). Seasons were defined as winter (Dec 1–Feb 28/29), spring (Mar 1–May 31), summer (Jun 1–Aug 31), and fall (Sep 1–Nov 30). P values are based on $\chi 2$ tests or Monte Carlo simulations of Fisher exact test, based on sample size. P values are nominal; data are presented as observed. 99 patients receiving dupilumab 300 mg

q2w + TCS and 296 receiving placebo qw + TCS were included. In NA&E, the proportion of patients with mild SCORAD scores (<25) was lowest in spring (13%/33%, placebo/dupilumab), higher in summer (28%/64%) and fall (36%/61%), and decreased in winter (25%/46%). In APAC, mild scores were lowest in summer (8%/22%,) vs fall (20%/43%), winter (27%/54%), and spring (26%/38%). SCORAD scores indicated significantly better outcomes for patients receiving dupilumab vs placebo across all seasons in NA&E ($P < 0.0001$ per season) and for summer–winter in APAC ($P < 0.01$ per season). Higher disease activity was seen in spring (NA&E) and summer (APAC). Dupilumab significantly reduced disease severity across seasons and geographical regions compared with placebo. Long-term treatment strategies for AD should strive to reduce seasonal flares varying by geographical location and climate.

### *P5.9*[#382]
### NEUROIMMODULATION

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Emerging research has highlighted the role of neuroimmunological mechanisms, termed neuroimmodulation, in the pathogenesis and clinical manifestations of AD. Explore the involvement of neuroimmodulation in atopic dermatitis, focusing on the interactions between neural pathways and immune responses that contribute to disease progression and symptomatology. Literature review conducted to summarise recent evidence on neuroimmodulation in AD. Relevant studies were identified through comprehensive searches of electronic databases, focusing on articles investigating neuroimmune interactions, neural signaling pathways, pruritis, stress response, and their impact on AD pathophysiology. Complex network of neuroimmune interactions in atopic dermatitis. Neurogenic inflammation mediated by neuropeptides contributes significantly to pruritus and inflammatory responses in AD. Dysregulation of neural pathways, including alterations in sensory nerve function and neurotransmitter release, correlated with disease severity and chronicity. Stress-induced neuroendocrine responses were implicated in exacerbating AD symptoms through modulation of immune cell activity and skin barrier function. Neuroimmodulation plays a pivotal role in the pathogenesis of atopic dermatitis, influencing disease onset, progression, and clinical manifestations. Understanding the intricate interplay between neural and immune systems offers novel insights into potential therapeutic targets for AD management. Future research should focus on elucidating specific neuroimmune mechanisms underlying AD and developing targeted interventions that modulate neurogenic inflammation and improve patient outcomes including psychotherapeutics.

### *P5.10*[#329]
### THE IMPACT ON THE QUALITY OF LIFE IN CHILD WITH SEVERE ATOPIC DERMATITIS: A CASE REPORT

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Atopic dermatitis (AD), also known as atopic eczema, is an inflammatory dermatosis, chronic and relapsing, characterized by pruritus, xeroderma and erythema, mainly affecting the flexural areas of the arms, knees, and neck. The etiology is multifactorial with featuresgenetic, immunological, and environmental. There is a social, economic, emotional and quality of life impact on patients, especially children, who are affected by sleep and cognition disorders, school absenteeism and mood disorders. Child male, 12 years old, black, born in Rio de Janeiro. Carrier with DA since 4 years of age, with worsening for 1 year, on Methotrexate 15mg/week for 6 months, clobetasol propionate cream and moisturizing cream two times a day. She reported her last hospitalization due to secondary infection of skin lesions in May 2023. 1 week ago, after discontinuing the medication on her own, she started to have a daily fever and worsening of the lesions. It featured a depressed mood and school absenteeism. Laboratory examination showed leukocytosis,increased inflammatory markers and positive Staphylococcus aureus in blood culture. Intravenous antibiotic therapy was prescribed, antihistamine and continued continuous use medications with improvement clinical and laboratory tests. After hospital discharge, it was indicated to start Dupilumab.The severity is made by SCORAD, whose assessment is based on the affected surface, the intensity of the eczema the presentation of lesions and the repercussion of the symptoms of pruritus and loss of sleep. The patient in this case had a SCORAD of 81.5, being classified as severe AD. In addition, the impact on the quality of life of patients who were absent from school during hospitalization and who presented depressed mood before clinical improvement was evident.

### *P5.11*[#766]
### QUALITY OF LIFE AMONG ADULT ATOPIC DERMATITIS PATIENTS ATTENDING THE REGIONAL DERMATOLOGY TRAINING CENTER IN NORTHERN TANZANIA

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Atopic Dermatitis is a chronic inflammatory skin disease that profoundly affects quality of life. Beyond the physical discomforts experienced by persons suffering from atopic dermatitis, patients also experience psychological, social and emotional distress however, a significant gap exists in understanding the the full extent of atopic dermatitis impact on quality of life in sub-Sahara Africa. 1. To assess the quality of life in adults with atopic dermatitis attending the regional dermatology training center, Northern Tanzania 2. To identify factors influencing quality of life among adult atopic dermatitis patients attending regional dermatology training center, Northern Tanzania. This research was an analytical cross-sectional design, focusing on adult AD patients seen at a Tertiary Centre in Northern Tanzania from September 2023 - April 2024. Diagnosis of AD was established using the Hanifin-Rajka criteria, the severity was assessed using SCORAD index. Data collection was facilitated through a standardized questionnaire, and the Dermatology Life Quality Index (DLQI) was utilized to evaluate the impact of the condition on patients' Qol. Data entry and analysis were conducted using SPSS version 22. 241 adult patients with AD were recruited, among these Mild AD (43.2%) moderated AD (37.3%) and severe AD (19.5%). 74% reported impairment in Qol (DLQI 6-30) depending on severity of AD, commodities, social economic status, environmental factors, stigma, sleep disturbance and access to health care. More than three-quarters of patients attended at RDTC with atopic dermatitis experienced impairment in quality of life, In regions such as the Sub Sahara Africa where healthcare resources are limited, assessing quality of life is crucial for developing holistic and effective multidisciplinary approach enhancing positive patient outcomes.

***P5.12*** *#371*

## REAL-WORLD PREVALENCE AND ASSOCIATED FACTORS OF NIPPLE ECZEMA IN PATIENTS WITH ATOPIC DERMATITIS

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Nipple eczema (NE) clinically presents as pruritic or painful erythema accompanied by oozing, erosion, fissures and lichenification. NE is observed in 6-23% of atopic dermatitis (AD) patients, prevalent in adolescent women. We aimed to evaluate the prevalence of NE and clinical or demographical factors associated with the presence of NE in AD patients. We conducted a cross-sectional study from May 2023 to October 2023, in which AD patients of all ages were enrolled. Participants completed a questionnaire on the symptoms of AD and NE and on the burden of NE. Among 163 patients, 47 patients (28.83%) had experienced NE at some point. The average age of NE onset in patients with AD was 21.60±7.75 years. The proportion of female was significantly higher in patients with NE (70.97%) compared to those without (28.21%) ($p<0.001$). Female sex (OR 8.66, CI 2.36-31.77, $p=0.001$), higher itch NRS score (OR 1.56, CI 1.06-2.29, $p=0.024$), higher IGA score (OR 4.29, CI 1.01-18.33, $p=0.044$) were significantly associated with NE in patients with AD. On nipple-specific quality of life (QoL) questionnaires, 29.55% of patients experienced severe impairment in their QoL due to their NE, and 41% of patients with NE demonstrated severe emotional and symptomal distress. Dermatologists should be aware of the association of nipple eczema with more severe atopic dermatitis and considerable emotional burden it can put on when treating atopic dermatitis patients.

***P5.13*** *#417*

## THE EFFECT OF TOPICAL STEROIDS ON INTRAOCULAR PRESSURE AND OCULAR COMPLICATION IN 0-YEAR-OLD CHILDREN WITH ATOPIC DERMATITIS

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Although infants have been reported to be a risk factor for increased intraocular pressure (IOP) due to steroid eye drops, there are no previous reports on the relationship between topical steroids and IOP and ocular complication in infants. The purpose of present study is to investigate the relationship between topical steroid use to the face and periocular area and changes in IOP and the presence of ocular complications in infants. Three 0-year-old patients with atopic dermatitis who were treated with topical steroids and examined at least two IOP measurements at the Kyoto Prefectural University of Medicine from 2008 to 2014 were included. Those patients were evaluated for subsequent changes in topical steroid doses, IOP, and the presence of ocular complication All of 3 patients had relatively high Investigator's Global Assessment (IGA) scores for the whole body and face, and elevated peripheral blood eosinophil counts. The average monthly dose of topical steroids on the face and the eye area were 6.55 g and 5.06 g, respectively. Throughout an average of 6 months of observation, IOP measurements were taken every 1 to 4 weeks, and none of the patients showed an increase in IOP. No other ocular complications were observed in any of the patients. In the present study, three 0-year-old patients were followed for an average of 6 months. All three patients had no elevation of IOP and no ocular complications were observed.

***P5.14*** *#769*

## CONTACT SENSITIZATION TO TOPICAL MEDICATIONS IN PATIENTS WITH SYMPTOMS OF ALLERGIC CONTACT DERMATITIS, WITH AND WITHOUT ATOPIC DERMATITIS - A 10-YEAR RETROSPECTIVE ANALYSIS OF PATCH TEST RESULTS

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Chronic use of topical drugs in patients with atopic dermatitis may provoke the onset of allergic contact dermatitis. The aim of the study was to assess the frequency of sensitization to topically applied drugs in a group of patients with contact dermatitis symptoms, with a focus on identifying a subgroup of patients with atopic dermatitis. The association between sensitization to topical drugs and other haptens, patient's gender and age was evaluated. A retrospective analysis of patch test results of 2772 patients tested between 2014 and 2024 was performed. Data were collected at the Allergic Skin Diseases Clinic, Department of Dermatology, Venereology, and Allergology at the University Clinical Center in Gdańsk, Poland. In the group of patients with AD, the frequency of sensitizations to at least one of the topically applied drug was slightly higher 6,94% than among patients without AD 6,60%. The most frequently observed sensitization in the group of patients with AD were to Caine mix III 5,77%, Neomycin sulfate 3,25%, Budesonide 2,44% and Benzocaine 2,06%. Significantly higher rates of sensitization to topical anesthetics were observed in the population with AD. The most common co-existing sensitization with sensitization to topical drugs in the group of patients with AD was Nickel sulfate and Cobalt chloride. Sensitization to topical medications was statistically more frequently observed among elderly patients. The continuous updating of data on the prevalence of drug sensitizations is essential, especially for patients with chronic conditions, where prolonged use of topical medications is inevitable. Keywords: Allergic contact dermatitis, Atopic dermatitis, Contact dermatitis, Topical drugs

***P5.15*** *#460*

## TEMPORAL AND TOPOGRAPHICAL HETEROGENEITIES IN CLINICAL MANIFESTATIONS OF ATOPIC DERMATITIS REVEALED BY A NON-SELECTIVE REGISTRY IN CHINA

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Background: Atopic dermatitis (AD) is a chronic inflammatory skin disease with diverse clinical manifestations. However, the heterogeneities in clinical presentations across different ages, genders, body sites, and seasons are not fully understood. Objective: To investigate the clinical heterogeneities of AD based on the Chinese non-selective registration system. Methods: This prospective study analyzed the information of 3829 AD patients recorded in the Chinese Non-selective Registry for AD (CNRAD) in a hospital-based manner during 2020-2022. Demographic

characteristics; distribution, type, and severity of the skin lesion; laboratory findings; allergic comorbidities; family history; and aggravating factors of the patients were analyzed. Results: The male/female ratio was 0.92 in adolescent and adult AD patients and 2.11 in elderly AD, indicating an age-dependent difference in AD occurrence between genders. AD patients in different age groups demonstrated differential preference for anatomical distributions of the skin lesion, and adult and elderly AD had less involvement of cubital fossa and popliteal fossa. Ten clinical types of AD were proposed based on the manifestation of skin lesions. Elderly AD showed higher severity compared to adolescence and adult AD, and male patients were more severe than female. Elderly AD had a lower proportion of extrinsic type than childhood AD. Seasonal change was the most important factor inducing the flares. Conclusions: Our study updates the knowledge on the heterogeneities in clinical manifestations of AD, which is significantly affected by temporal factors including age and season.

### *P5.16*[#465]

## ATOPIC DERMATITIS IN ADULTS : CLINICAL FORMS AND ASSOCIATED COMORBIDITIES FROM 2019-2023 IN THE UNIVERSITY CLINIC OF DERMATOLOGY-VENEROLOGY OF NUHC-HKM, COTONOU (BENIN)

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Atopic dermatitis (AD) in adults is seldom studied despite its increasing prevalence. The aim of this study was to describe the clinical forms of AD and identify associated comorbidities. A descriptive and analytical cross-sectional study was conducted in the University Clinic of Dermatology-Venerology of the NUHC-HKM of Cotonou. It included patients ≥ 18 years of age received from January 2019 to December 2023 in the department in whom the diagnosis of atopic dermatitis was retained. The Scoring of Atopic Dermatitis (SCORAD) was used to assess the severity of the disease. The significance threshold was $p<0.005$. The prevalence of AD was 2.76% (147/5332 patients). The average age of patients was 42.06 ± 16.23 years. The sex ratio M/F was 0.65. Late-onset AD was the predominant form (78.23%). It mainly affected adults aged between 40 and 50 years ($p=0.023$), males (79.31%; $p=0.104$) with a moderate (86.36%) to severe (80%) intensity ($p=0.004$). It was followed by persistent AD (15.65%) and recurrent AD in adulthood (6.12%). The atopic comorbidities were: rhinitis (29.93%), conjunctivitis (25.85%), sinusitis (17.01%), asthma (13.61%) and food allergy (6.12%). Based on the visual numerical scale, the average intensity of pruritus was 6.58 ± 1.76, pain unrelated to pruritus 5.33 ± 2.60, and sleep disturbance 4.33 ± 1.23. The main clinical forms identified were: chronic AD (74.15%), acute AD (18.37%), palmoplantar dyshidrosis (9.52%). The most frequent complications were lichenification (28.57%) and contact eczema (17.01%). The most common associated dermatoses were superficial mycoses (16.32%). Late-onset AD was the most common form. Because of its chronicity, severity, comorbidities and complications, adult AD could have a major impact on patients' quality of life, sex life and productivity.

### *P5.17*[#365]

## EARLY-LIFE DIETARY FACTORS AND RISK OF PERSISTENT ATOPIC DERMATITIS: A NATIONWIDE COHORT AND CROSS-SECTIONAL STUDY

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Atopic dermatitis (AD) can persist in older children and significantly impact patients and their families. Various factors including genetic and environmental elements, such as dietary factors, may contribute to its persistence. This study aimed to investigate the role of early-life dietary factors, from infancy to preschool age, in influencing the risk of persistent AD beyond the preschool years. This cohort study was conducted using the Korean national insurance database including 608,943 children born between 2008 and 2010 who were diagnosed with AD before age 7 years and were followed-up until age 9 years. Dietary factors were assessed through a series of health examinations, and AD persistence was determined based on medical examinations between ages 7 and 9 years. Associations between dietary factors and persistent AD were quantified using logistic regression. Among the participants, 131,525 (21.6%) experienced persistent AD. Prolonged breastfeeding beyond ages 4–6 months, delayed introduction of complementary foods beyond age 6 months, picky eating habits, irregular meal patterns, and obesity or overweight were positively associated with persistent AD. Transitioning from picky eating to diversified eating, from irregular to regular meal patterns, and from obese or overweight to normal weight were negatively associated with persistent AD. Early-life dietary factors are significant to the persistence of AD beyond preschool age. Promoting healthy dietary habits early in life is instrumental to lowering the risk of persistent AD among children.

### *P5.18*[#438]

## QUALITY OF LIFE IN ADULT PATIENTS WITH ATOPIC DERMATITIS IN QATAR

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Atopic dermatitis (AD),which is characterized by intense pruritus and dry sensitive skin, is the most common chronic inflammatory skin disorder in the Qatari population. AD can severely affect the Quality of Life (QoL) of patients and disruptive effect on social relationships and daily activities.Psychiatric comorbidities including depression,anxiety, and suicidal ideation,are a major burden for individuals with moderate-to-severe AD and mild cases. The main objective is to measure the impact of AD on Quality of life of the Qatari population A descriptive, cross-sectional, observational study was conducted with patients diagnosed with AD using the standard DLQI questionnaire. Demographic data and clinical data such as SCORAD to assess the disease severity, itch score were collected for validating purposes of the DLQI. A total of 100 adult AD patients were enrolled and analyzed.

Of the 100 participants, 54% were male and 46% were female. The mean age was 31.24 (±11.87) years of age. SCORAD score indicated that almost half of the subjects (45%) had severe AD, while 43% suffered from moderate and 12% from mild AD. The mean DLQI score for all AD patients was 15.86 (±9.46). Based on the DLQI categorization, a majority (44%) of AD patients reported a very large effect of the skin disease on their QoL, while 23% reported moderate effect, 21% extremely large effect and only 12% reported small effect on QoL.An increase in the itch intensity (mean 8.3/10) correlated with a reduced QoL (r (98) = .258, p = .010). Besides inflammation, atopic dermatitis often causes constant, intense itching, and visible cutaneous lesions and rashes (e.g., eczema, redness, flaking, etc.) and scratching resulting in a large negative impact on the quality of life of patients. Our data demonstrate that AD also in the local population exerts a detrimental effect on the lives of Qatari AD patients.

### *P5.19*[#378]

### THE GLOBAL ATOPIC DERMATITIS ATLAS: A SYSTEMATIC REVIEW MAPPING GLOBAL BURDEN OF ATOPIC DERMATITIS

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Atopic dermatitis (AD) ranks 15th among all non-fatal diseases and 1st among all skin diseases with large geographical variation, based on Global Burden of Disease data, making AD an important global health problem. The Global Atopic Dermatitis Atlas (GADA) aims to increase the available knowledge on the global burden of AD, particularly in middle- and low-income settings. GADA's systematic review aims to answer, "What are the global, regional, and country-specific prevalences and incidences of AD?" Our 'living' evidence synthesis aims to regularly update the global prevalence, incidence, and severity distribution of AD. The results of this systematic review will feed into the development of an international consensus on AD epidemiological data generation and provide recommendations to stakeholders. A systematic literature search was conducted across Medline, Web of Science, and Embase. A team of four independent reviewers performed dual screening and data extraction with support from senior reviewers. Conflicts were resolved by one senior independent reviewer. The Newcastle-Ottawa Scale was used to assess risk of bias. We used Bayesian hierarchical mixed regressions to model the prevalence and incidence of AD in each country using geographic, demographic, economic, and environmental country/regional characteristics. We estimated the AD prevalence and incidence in nations lacking data by applying the equation derived in the methods and sharing information from countries in the same region. GADA is providing a 'living' platform to regularly collect published data on the prevalence and incidence of AD at the global, regional, and country levels. We hope that our updates will serve as a useful global resource for all stakeholders dealing with AD.

### *P5.20*[#319]

### THE PATTERN OF PEDIATRIC DERMATOSES AMONG EXPATRIATES IN UAE: A SIX-MONTH STUDY

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There is a paucity of data on the clinical patterns of childhood dermatoses, especially atopic dermatitis, among expatriates in the UAE. This study aims to identify the pattern of pediatric dermatoses, assess the prevalence and severity of atopic dermatitis (AD) evaluated at a dermatology outpatient department in Dubai and Abu Dhabi, UAE, and compare the findings with similar surveys conducted in other countries. A retrospective observational study was performed on children up to 14 years old between December 2023 and May 2024. Data were collected from documented files stored in the system for each patient. 7,397 patients were seen in dermatology consultations, with 998 children under 14 years of age. The mean age was 7.3 years, and the male-to-female ratio was 1:1.03. Skin diseases were categorized, with allergic skin diseases being the most common group (57.41%). Other main categories included infectious diseases (22.9%), adnexal disorders (9.22%), papulosquamous disorders (2.00%), cysts and neoplasms (0.6%), vascular disorders (0.2%), genodermatoses (0.2%), disorders of pigmentation and nevi (1.9%), and miscellaneous (5.5%). Of the most common dermatoses, atopic dermatitis (30.26%), seborrheic dermatitis (6.01%), and pityriasis alba (6.01%), followed by acne vulgaris (5%) and viral warts (5%), topped the list. When analyzing the data by nationality, the prevalence of AD among Indian children in our study was 30.8%, followed by 37.14% in Filipino children, 24% in Bangladeshi children, 20% in Sudanese children, and 17.24% in Pakistani children. The study highlights the role of regional and environmental factors in determining the pattern of dermatoses, as allergic skin diseases were the most common dermatoses in Indian children residing in the UAE, while the majority of studies conducted in India found infections and infestations to be the leading group of dermatoses.

### *P5.21*[#427]

### KNOWLEDGE ATTITUDES PRACTICES OF ATOPIC PATIENTS IN OUAGADOUGOU

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Atopic dermatitis affects the lives of patients and those around them. Thus, a good knowledge of the disease, an appropriate attitude and practices are important for a good quality of life. The objective of this study was to assess the knowledge, attitudes, practices of atopic patients in Ouagadougou. We conducted a cross-sectional study in 3 health facilities, including a private clinic, from 1 November 2023 to 29 February 2024. Knowledge of whether or not AD is contagious, the possibility of recovery and the possibility of leading a healthy life with AD were assessed. Attitudes related to the avoidance of common irritants and communication with their doctor, and practices concerned the use of emollients and compliance. We enrolled 86 patients, 25 of whom were in private practice. In terms of knowledge, 67.44% of respondents knew that AD is not contagious, 30.23% did not know, and 2.33% thought it was contagious. Regarding

the possibility of curing AD, 77.90% said yes, 18.60% did not know. Regarding the possibility of leading a healthy life with AD, 73.26% answered positively and 17.44% did not know. In terms of patient attitudes, 77.91% said they avoided irritant substances, and 73.25% communicated openly and regularly with their doctor. As for practices, 79.07% regularly used emollients to moisturize their skin, and 96.51% scrupulously followed their doctor's instructions. This study shows that patients have a good knowledge of atopic dermatitis, a responsible attitude and correct practices. However, therapeutic education needs to be stepped up to improve the knowledge, attitudes and practices of all patients.

***P5.22*** *#360*

## THE ASSOCIATION BETWEEN CHILDHOOD ENVIRONMENTAL EXPOSURE AND ATOPIC DISEASES IN THE DUTCH GENERAL POPULATION

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Studies on the association between childhood environmental exposure and multiple atopic diseases later in life are limited. To investigate the association between childhood environmental exposure, atopic dermatitis (AD), and other atopic comorbidities (AC), including asthma, food allergy (FA), allergic rhinitis (AR). Data on asthma, AR, FA, and childhood environmental exposure (including birth weight (BW), gestational age, delivery mode, breastfeeding, tobacco smoke, pets, living condition, air pollution) were collected between 2006-2013 from the Lifelines study, an ongoing population-based cohort study on 167 729 residents of the northern Netherlands. Data on self-reported physician-diagnosed AD in lifetime was collected between February - May 2020. Outcomes were categorized into: none of any atopic disease, AD only, AD + 1 AC, AD + ≥2 AC. Associations were explored using logistic regression with adjustments for age and sex. Among the 32 377 included participants, 28 165 (87.0%) without any atopic disease, 1 844 (5.7%) with AD only, 1 302 (4.0%) with AD + 1 AC, and 1 066 (3.3%) with AD + ≥2 AC. Compared with participants without any atopic disease, high BW, having ever been breastfed, and pet ownership after age 1 were significantly positively associated with AD only. Moreover, early or late/post-term birth, along with exposure to black carbon (BC) and nitrogen dioxide (NO2), were linked to a higher risk of AD + 1 AC; but living in farm/less-urbanized areas were associated with a lower risk. For AD + ≥2 AC, exposure to fine particulate matter, BC, and NO2 showed a positive association, while pet ownership, especially cats, and living in farm/less-urbanized areas indicated a negative association. The effects of environmental exposures vary by AD only and AD + other atopic diseases. The impact of pets, farm living, and air pollutants require more attention.

***P5.23*** *#768*

## CLINICAL PATTERN, CONTRIBUTING FACTORS AND QUALITY OF LIFE AMONG PATIENTS WITH HAND ECZEMA ATTENDING REGIONAL DERMATOLOGY TRAINING CENTRE, NORTHERN TANZANIA

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Hand eczema is inflammation of the skin of the hands with a chronic and relapsing occurrence. It is a multifactorial disease with multiple contributing factors with a large impact on the quality of life both socially, economically and psychologically. To determine the clinical pattern, contributing factors and quality of life among patients with hand eczema attending at a Tertiary Centre in Northern Tanzania. This was a cross-sectional descriptive, hospital based study and conducted at tertiary center in Northern Tanzania from September 2022-2023. All patients with hand eczema >18 years who consented and fitted the inclusion criteria were enrolled. Hand Eczema Severity Index Score was used to assess the severity of hand eczema while Quality of Life Hand Eczema Questionnaire was used to assess their quality of life. Age range was between 18-70 years with mean age of 35years and F:M ratio of 0.9. 59.5% (47/79) having water related occupations and majority of them being heath care workers at 20.3%. Scaling and mixed morphology were the most reported presentations with palms and fingers being most affected. Majority identified triggering factor of symptoms, water was the reported by. There was a significant impairment in quality of life with increase in severity of hand eczema, wet work, increasing in hand washing frequency and use of detergents. All participants had a significant negative impairment in their quality of life due to the hand eczema. There is a significant impairment in quality of life among patients with hand eczema in this study. Additionally, a significant positive correlation between quality of life and disease severity was seen. Therefore, prompt and proper interventions and holistic approach/treatment is needed to reduce the chronicity of the disease which will reduce the psychological, physical, social and economic burden of the condition.

***P5.24*** *#386*

## TADPOL STUDY: A REAL-WORLD EVIDENCE ON DUPILUMAB AND UPADACITINIB IN THE TREATMENT OF MODERATE-TO-SEVERE ATOPIC DERMATITIS IN POLAND

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TADPol (Treatment of Atopic Dermatitis in Poland) study is a prospective multicenter project aimed to compare the effectiveness and safety of dupilumab (DUPI) and upadacitinib (UPA) in the treatment of moderate to severe atopic dermatitis over a 52-week period among AD patients in Poland. The primary endpoints were changes in disease severity measured by Eczema Area and Severity Index, Investigator's Global Assessment and SCORing of Atopic Dermatitis. The impact of treatment on patients' well being was evaluated with Dermatology Life Quality Index, EuroQol-5D, Patient Health Questionnaire, General Anxiety Disorder Assessment, Perceived Stigmatization Questionnaire and Dysmorphic Concern Questionnaire. Subjects

were assessed at Baseline visit Week 0, Week 4/8, Week 16, Week 28, Week 40 and Week 52. Collected data included demographics, disease characteristics, treatment regimens, and clinical outcomes. A total of 90 out of 200 planned patients from seven different clinical centers have been already recruited from November 2022: 47 (52.2%) patients have been treated with UPA, 43 (47.8%) with DUPI. The mean age of patients was 27.2±16.6 years. The mean EASI scoring at Week 0 was 29.9±8.9 points. Our preliminary results showed that both DUPI and UPA demonstrated significant improvements in disease severity scores. However, the magnitude of improvement and treatment response rates varied between these therapies. Additionally, safety profiles differed, with distinct patterns of adverse events observed in each treatment group. This prospective multicenter real-world data study provides valuable insights into the comparative effectiveness and safety of DUPI and UPA in the management of moderate to severe AD in the Polish population over a 52-week period.

### *P5.25#389*

### DUPILUMAB IMPROVES DISEASE SEVERITY AND QUALITY OF LIFE IN PATIENTS WITH ATOPIC DERMATITIS: REAL-WORLD DATA FROM THE CORNERSTONE

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Dupilumab has demonstrated a positive benefit-risk profile in clinical trials for atopic dermatitis (AD) but with limited data on real-world use in China. This retrospective study aimed to assess real-world effectiveness of dupilumab in Chinese AD patients. Data from the CORNERSTONE database (NCT05316805) were analyzed for AD patients initiating dupilumab at baseline (i.e., the first visit in the CORNERSTONE) between August 2021 and July 2022 who had at least one follow-up visit. Follow-up data up to 24 weeks were obtained. Among 1,020 AD patients included, 57.2% were male, with a mean (standard deviation, SD) age of 37.5 (23.2) years. From baseline to week 24, the mean Eczema Area and Severity Index (EASI) score decreased from 13.5 (11.5) to 3.6 (4.9), with 64.2% of patients achieving ≥75% improvement in EASI. The mean pruritus numerical rating scale (PP-NRS) decreased from 7.5 (2.3) to 3.3 (2.2). The proportion of patients achieving PP-NRS ≥4-point improvement from baseline increased from 26.5% at week 1 to 63.7% at week 24. The mean Atopic Dermatitis Control Tool (ADCT) and Patient-Oriented Eczema Measure (POEM) scores decreased from baseline to week 24 (ADCT, 15.9 (5.1) vs 5.7 (5.1); POEM, 16.9 (6.8) vs 6.7 (6.5)), corresponding to a mean percent change of -60.0% and -58.4%, respectively. Regarding quality of life (QoL), the Dermatology Life Quality Index (DLQI) for patients aged ≥16 years and Children's DLQI (CDLQI) for patients ≥4 and <16 years decreased from 13.1 (7.2) to 4.6 (5.7) and 13.7 (6.4) to 5.3 (5.7), respectively. In a real-world setting, Chinese AD patients treated with dupilumab achieved improvement in signs and symptoms, as well as QoL. Future studies are warranted to evaluate the long-term effectiveness in daily practice in China.

### *P5.26#464*

### ATOPIC DERMATITIS IN PATIENTS SEEN AT THE DERMATOLOGY DEPARTMENT OF THE UNIVERSITY HOSPITAL MAHAVOKY ATSIMO, MAHAJANGA, MADAGASCAR

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The most recent data concerning atopic dermatitis (AD) in patients seen in Mahajanga date back to more than 20 years. This study aimed to describe the epidemiological and clinical characteristics of patients with atopic dermatitis seen at the Dermatology Department of the University Hospital Mahavoky Atsimo, Mahajanga, Madagascar. This longitudinal descriptive study was conducted over a thirty-six-month period, from January 2021 to December 2023, among outpatients treated at the Dermatology Department of the University Hospital Mahavoky Atsimo. Of the 2264 outpatients examined during the study period, 55 patients with AD were retained, with an overall prevalence of 2.56%. Patients aged > 15 years were predominant (63.63%), with a prevalence of 1.76%. The prevalence of AD in children was found to be 7.14%. The mean age was 31.02 ± 14.43 years in adults and 3.63 ± 3.71 years in children. Our population was predominantly female. A high frequency of patients seen for atopic dermatitis was observed during the dry season (60%). A personal history of atopy was found in 67.3% of the patients. According to SCORAD, 70% of the children had moderate AD, and 57.1% of the adults had mild AD. Only one case of severe AD was observed in children, and none in adults. All of our patients received dermocorticoids and emollients, with a good response assessed at 3 months. In our study, the prevalence of AD was lower than that reported in a study carried out 20 years ago. The severe form is rarely observed in Mahajanga, where the climate is hot for most of the year.

### *P5.27#534*

### INDIVIDUALS WITH DARIER DISEASE HAVE AN INCREASED RISK OF SUICIDE AND SELF-INJURIOUS BEHAVIOURS

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Darier disease (DD) is a rare autosomal dominant skin disorder marked by malodorous plaques and keratotic papules in seborrhoeic areas, caused by mutations in ATP2A2, which encodes the SERCA2 pump. DD increases the risk of psychiatric disorders, including bipolar disorder and intellectual disability. Using Swedish national registers, we conducted a longitudinal cohort study to estimate the risk of suicide and self-injurious behaviors (SIB) in individuals with DD. Suicide and SIB were our outcomes of interest, given their severe impact on individuals and societal costs. DD was identified using the ICD-10 code (Q82.8E) in the National Patient Register (NPR). Suicide and SIB were defined

using specific ICD-10 codes. We identified 935 individuals with DD, matched them with up to 100 controls without DD, and estimated risk ratios (RR) of suicide and SIB using conditional logistic regression, adjusting for education level. Individuals with DD had a threefold increased risk of suicide (RR 3.0, 95% CI 1.2–7.2) and an 80% higher risk of SIB (RR 1.8, 95% CI 1.3–2.5) compared to controls. The risk remained similar after adjusting for education. This first report highlights the significantly increased risk of suicide and SIB in individuals with DD, emphasizing the need for routine psychiatric screening in dermatology clinics. Enhanced collaboration between dermatologists and psychiatric specialists may be crucial for managing DD patients.

***P5.28*** [#414]

### IDENTIFYING RISK FACTORS RELATED TO SOCIAL DISADVANTAGE AND COMPARING OUTCOMES IN ATOPIC DERMATITIS PATIENTS WHO ARE REFERRED TO AN AUSTRALIAN PAEDIATRIC TERTIARY REFERRAL CENTRE

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Background: Physical, psychological, and social co-morbidities and complications are well described for atopic dermatitis(AD). Few cohort studies exist examining the effects of psychosocial determinants on AD disease outcomes. The role of social disadvantage (SD) related factors on AD outcomes has not yet been studied in an Australian population. Objective: This study aims to compare AD outcomes in children, those with and those without at least one risk factor related to SD. Identified risk factors related to SD include rurality, First Nations status, living in a postcode listed as SD, a culturally and linguistically diverse background, neuropsychiatric co-morbidities and a designation of "Vulnerable Child" by a healthcare provider. Methods: A 1-year retrospective cross-sectional study of children ≤16 years with AD seen at the outpatient dermatology department at The Royal Children's Hospital Melbourne (target population N = 1480) was conducted. Data was collected from the electronic medical records of children with and without SD risk factors at a ratio of 1:1. Poor AD outcomes were defined as severe AD, increased number of emergency (ED) presentations, and/or hospital admissions. Other data collected included demographic data, co-morbidities and AD treatments including use of prednisolone and antibiotics for infected AD. Multivariable regression analysis determined whether SD was associated with worse AD outcomes. Results: Children belonging to at-least 1 of the 6 at-risk groups have significantly worse AD outcomes across all measured parameters, except for the frequency of ED presentations. The groups identified as having the worst outcomes include those with neuropsychiatric comorbidities, rural communities, vulnerable children. Conclusion: This study highlights the impact of social determinants on AD outcomes in Australia, providing valuable insights for future healthcare planning and resource allocation.

***P5.29*** [#428]

### CREATING A MODEL FOR EVALUATING HEALTHCARE DISPARITIES IN THE ACCESSIBILITY OF TREATMENTS FOR ATOPIC DERMATITIS

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Healthcare disparities can be defined as differences in accessibility of healthcare services, as well as differences in the rates of disease between population groups. Currently there is no model to measure healthcare disparities in atopic dermatitis. The aim of this study is to propose a model to evaluate healthcare disparities in the accessibility of treatments for atopic dermatitis (AD). A model was developed to capture doctors' and patients' perspectives on the accessibility of 17 treatments for AD in Brazil. Data was collected from a nationwide online survey from 514 doctors and 529 patients and caregivers. A score model was developed to evaluate disparities across different treatments, populations and settings. The score considers the real need to access different treatments. To quantify the formula, doctors and patients evaluated treatment accessibility using a four-point Likert scale. Also, doctors evaluated treatment necessity and patients evaluated treatment effectiveness. These evaluations were used to calculate a 7 point score ranging from -3 to 3. Collected data confirmed that socioeconomic factors significantly impacted treatment disparities. Antibiotics and methotrexate usage was more prevalent among low-income populations. Educational programs and dupilumab emerged as top unmet needs. Racial disparities in accessibility to some AD treatments were evident. No regional disparities in treatment access were found, however, at the municipal level, significant disparities were associated with economic and educational levels. Our proposed model was able to successfully measure healthcare disparities in the accessibility of treatments for AD in Brazil. This methodology could be applied in other fields of medical research to identify and address healthcare disparities worldwide.

## P6. New Technologies and AD

***P6.1*** [#432]

### ITCH REDUCTION AND QUALITY OF LIFE IMPROVEMENT IN AD FOR FIRST HUMAN USE OF ZABALFIN

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Main concern in atopic dermatitis (AD) is persistent intolerable itch resulting in disruptive quality of life (QOL). Unmet need exists for an AD drug that is worry-free for long-term use, provides strong improvement in itch and QOL, treats inflammation and bacteria to control AD flares, treats infected AD. Current AD drugs have shortcomings in efficacy and side-effects. Zabalafin (AB-101), a novel topical first-in-class multi-target therapeutic natural drug, has multiple bioactive compounds with multiple mechanisms of action including anti-itch, anti-inflammatory, antibacterial. First-in-human Phase 2 study assess itch, QOL, efficacy improvement for AD's inflammatory and bacterial components, and safety of zabalafin. All participants entered uniquely with AD skin infected determined by Skin Infection Rating Scale (SIRS) and investigator clinical judgment. Itch relief assessed using Pruritus Numeric Rating Scale (NRS). QOL assessed using Patient Oriented Eczema Measure (POEM). AD inflammation assessed with EASI and IGA. Population in-

cluded mild, moderate, severe AD in ages 3 to 45. All received zabalafin BID 8 weeks open label returning multiple times for assessments. Interim results for 10 participants: 7 age 3-17; 3 age 18-45. Effectiveness in treating AD inflammation and infection was demonstrated in all age groups using EASI, IGA, SIRS. Itch NRS score reduction of ≥4 achieved in 80% of participants, reduction demonstrated in immediacy and long term. POEM score reduction of ≥6 achieved in 100% of participants. Results suggest zabalafin effective to treat both AD non-infected and AD skin infected. Zabalafin showed clinically leading results in pediatric and adult populations for itch and QOL improvement and is a promising AD drug with potential for worry-free long-term continuous use.

### *P6.2*[#487]

### ELECTRODERMAL ACTIVITY: AN EXPLORATIVE STUDY ON A NOVEL DIGITAL BIOMARKER ASSESSING THE OBJECTIVE STRESS LEVEL IN PATIENTS WITH ATOPIC DERMATITIS

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Atopic dermatitis (AD) is a chronic-inflammatory skin disease with increasing prevalence. Numerous factors, such as physical or emotional stress, have shown to cause or exacerbate AD. However, to date no objective, real-time biomarkers for stress detection are available. Electrodermal activity (EDA) is a novel parameter providing insights into stress level. The method is based on measuring skin conductivity, reflecting the sympathetic innervation of sweat glands. The primary objective is to evaluate the effectiveness of EDA as a digital biomarker for measuring stress in patients with AD. This prospective cross-sectional pilot study involved 45 participants. As a prerequisite for future studies, we addressed EDA in AD patients (n=25) compared with healthy adults (n=20). EDA was analyzed using the Nexus sensor (Nexus-10, Mindmedia). Two electrodes were attached to the fingers and after acclimatization, study participants were instructed to rest. Results show significant difference in EDA between healthy skin individuals and patients with AD. Against expectations, patients with AD exhibited lower baseline EDA values (1,6 ± 1,5 µS) compared to the healthy control group (2,5 ± 1,6 µS, $p < 0.05$). Our results show lower baseline EDA in AD patients, possibly due to their typically drier skin reducing the conductivity. This observation should be confirmed by larger studies. Moreover, long-term measurements are required to capture variations and enable more generalizability. This approach could lead to a comprehensive understanding of EDA and its potential in the stress measuring of AD.

### *P6.3*[#330]

### THE GLOBAL REACH OF ARTIFICIAL INTELLIGENCE IN ATOPIC DERMATITIS

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Atopic dermatitis (AD) is the most common chronic inflammatory skin condition with a staggering global burden of disease. The demand for healthcare is increasing globally with notable disparities in access to resources across various regions of the world. The rapid expansion of Artificial Intelligence (AI) has the potential to revolutionize healthcare. An initial assessment of AI-generated responses to common patient queries, focusing on ChatGPT-4's performance in the English language, revealed that the large language model offers comprehensive and reliable answers without specific priming or additional input for English language queries. To offer a follow-up evaluation of the quality and reliability of the responses generated by ChatGPT-4 to patient questions related to AD in eight different languages. 101 commonly asked questions from AD patients were submitted to ChatGPT-4 in eight languages. Dermatologists, proficient in these languages evaluated the generated responses for quality and reliability and assigned scores to the responses based on a 5-point Likert scale. The graded responses were averaged for each language and ranged from 3.98 to 4.62, indicating variability in the AI-generated responses across languages. ChatGPT can provide useful information, but there are significant variations in response quality across different languages, and certain medical topics require improved accuracy and comprehensiveness.

## P7. Topical therapies for AD

### *P7.1*[#458]

### TREATMENT SATISFACTION OF PARENTS OF CHILDREN WITH ATOPIC DERMATITIS TREATED WITH DERMOCORTICOIDS

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Atopic dermatitis is a common chronic inflammatory dermatosis in children. The prevalence of atopic dermatitis continues to rise worldwide. In Madagascar, its prevalence in children has also risen from 1.09% to 5.6% in 10 years. For years, dermocorticoids were the only truly and rapidly effective treatment for AD in children. The aim of this study was to assess the treatment satisfaction of parents of children with atopic dermatitis treated with dermocorticoids. This was a cross-sectional study from May to December 2023 of children seen in consultation for atopic dermatitis in the Dermatology Department. The TSQM II questionnaire was used to assess satisfaction with treatment. To assess quality of life, the IDQOL was used for children under 5 years of age, the CDLQI for children aged 5 to 15 years, and disease severity

was assessed using the SCORAD score. Sixty-nine patients were included, 49 aged under 5 years and 20 aged 5 to 15 years. The sex ratio was 0.62. Mean TSQM II was 49.82±7.99. Parental satisfaction was high in relation to the general opinion, efficacy and tolerance of dermocorticoids. Dissatisfaction factors identified were : patient's distance from the center, low level of education, affluent socioeconomic level, disease complication, lack of therapeutic education and lack of improvement after treatment. There was no association between quality of life and satisfaction with treatment. Parents were satisfied with their children's treatment, especially in terms of drug tolerance.

***P7.2*** *#406*

## EFFECTIVENESS AND TOLERABILITY OF AN EMOLLIENT 'PLUS' FORMULATION IN MONOTHERAPY AND ADJUNCTIVE THERAPY IN CHILDREN WITH ATOPIC DERMATITIS: RESULTS OF A REAL-WORLD OBSERVATIONAL STUDY CONDUCTED IN POLAND

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Regular emollient use is the basis of all stages of atopic dermatitis (AD) treatment. In recent years, a special range of emollient 'plus' formulations, enriched with additional active substances is recommended in AD treatment. To assess the impact of emollient 'plus' containing Vitreoscilla filiformis biomass extract grown in thermal spring water (VFB-TSW) and Ophiopogon japonicum root extract in monotherapy or adjunctive therapy on clinical symptoms, and patient-reported outcomes in children with AD. Children up to 17 years of age participated in the real-world, observational study conducted in Poland between October 2022 and January 2023. The measurement tool was a designed questionnaire that assessed the skin condition and patient-reported outcomes on the comfort of life. The questionnaire was completed at the initial visit and again after 4 weeks of treatment during the follow-up visit. In total, 329 children with AD were evaluated: more than half were girls (57.8%); children aged 1-3 years predominated (32.8%). The dominant group of children (72.6%) were recommended to use the emollient 'plus' in monotherapy, while others were recommended to use emollient 'plus' in adjunct to other AD treatment, which mainly included topical anti-inflammatory drugs (topical corticosteroids, topical calcineurin inhibitors) and/or antihistamine drugs. After a 4-week treatment period, in both groups of children using emollient 'plus' in monotherapy and emollient 'plus' with RX treatment, more patients had mild or absent disease severity versus the initial visit (92.4% vs 33.8% and 76.0% vs 13.3%, respectively). Daily discomfort decreased by at least one grade compared to the initial visit in both groups for over 80% of patients. These real-world data support that emollient 'plus' is effective in monotherapy as well as adjunctive therapy in children with AD.

***P7.4*** *#376*

## OPTICAL COHERENCE TOMOGRAPHY DIFFERENTIATES SKIN ATROPHOGENICITY OF TOPICAL ANTI-INFLAMMATORY TREATMENTS IN PATIENTS WITH ATOPIC DERMATITIS

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Introduction: Although topical corticosteroids (TCS) are an efficacious first-line therapy for mild-to-moderate AD, they are associated with adverse effects that can exacerbate the condition and undermine patient trust. There is a need for robust evidence to support the safe use of topical anti-inflammatory agents. Objective: To compare the effects of the phosphodiesterase-4 inhibitor crisaborole, 2% (crisaborole), and the moderate-potency TCS betamethasone valerate, 0.025% (BV), on skin microstructure and molecular composition. Method: In an observer-blind within-patient controlled trial (ISRCTN52806782), 40 patients with AD received twice-daily treatment with crisaborole and BV, randomly assigned to the right or left volar forearm (1 fingertip unit [FTU], 28 days), antecubital fossa (1 FTU, 28 days) and cheek (1/4 FTU, 14 days). Skin assessments were performed by optical coherence tomography and infrared spectroscopy at baseline through post-cessation of treatment. The primary endpoint was the change in epidermal thickness between treatments. Results: At 28 days, 3.3 times greater epidermal thinning was observed on the BV- vs crisaborole-treated forearm (mean difference 6.32 µm [95% CI, 3.45-9.18], $P \leq 0.0001$) and was associated with increased birefringence (indicative of altered collagen structure), greater reduction in superficial plexus depth, and altered carboxylate levels. While thinning on both the forearm and antecubital fossa was significantly greater with BV vs crisaborole at 14 days, there was no statistically significant difference on the cheek. Conclusions: Compared with a moderate-potency TCS, crisaborole caused significantly less pathologic skin atrophy, suggesting a better longer-term safety profile. The nondestructive methodology described represents a novel tool to optimize safe treatment strategies.

***P7.4*** *#411*

## DIRECT MEDICAL COST OF EMOLLIENTS IN THE MANAGEMENT OF ATOPIC DERMATITIS IN OUAGADOUGOU

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The management of atopic dermatitis requires the use of emollients to combat xerosis. The aim of our study was to assess the direct medical cost of emollients in Ouagadougou We conducted a cost evaluation study from the patient's point of view in five health facilities in the city of Ouagadougou (2 public and 3 private) treating patients with atopic dermatitis from 1 February to 30 April 2024, and in 3 pharmacies. We enrolled a total of 114 patients, 45 in private health facilities, 35 of whom had health insurance covering emollients for 11.63% of them. The mean age of the patients was 7.95 ± 12.16 years, and the mean duration of an attack was 7.41 days, with extremes of 2 and 21 days. Mild symptoms

were reported in 74.56% of patients. Cream was the galenic form prescribed for emollients in 76.92% of cases, with an average of 500 ml bottle used per month. The average unit purchase cost of the emollient was 10,600 CFA francs, with extremes of 2,000 and 30,000 CFA francs. The emollient prescribed in public facilities cost 8478 CFA francs compared with 14146 CFA francs in private facilities, with a significant difference (P=0.0001); the emollient cost 12672 CFA francs for insured patients compared with 9414 CFA francs for uninsured patients, with a significant difference (p 0.0182). The use of emollients was discontinued by 38.60% of patients because of the high cost, of which 65.91% came from public structures, and replaced by shea butter by 28.95%. In the 3 pharmacies visited, the average number of emollients sold on advice was 8 bottles per day, 50 per week and 212 per month. Atopic dermatitis was generally mild in severity, requiring 500 ml of emollient per month, the cost of which was equivalent to a third of the country's minimum wage, leading to discontinuation in more than a third of patients. Alternation was sought through the use of local products such as shea butter

## P8. New Targeted and Systemic Therapies for AD

### *P8.1*[#397]

### MAINTENANCE OF OPTIMAL RESPONSE OVER 2 YEARS IN PATIENTS WITH ATOPIC DERMATITIS TREATED WITH DUPILUMAB

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Sustained disease control is an important goal of long-term therapies for atopic dermatitis (AD). We report maintenance of optimal response in patients treated with dupilumab for over 2 years. In this post hoc analysis, adults with moderate-to-severe AD who received dupilumab 300 mg q2w in SOLO 1/2 (NCT02277743/NCT02277769) and achieved optimal response of clear/almost clear skin (Investigator's Global Assessment [IGA] 0/1) and/or ≥75% reduction from baseline in Eczema Area and Severity Index (EASI-75) at Week 16, were rerandomized in SOLO-CONTINUE (NCT02395133) for an additional 36 weeks to dupilumab 300 mg monotherapy q2w (n = 73), q4w (n = 36), q8w (n = 34) or placebo (n = 36), followed by 60 weeks of dupilumab 300 mg weekly in an open-label extension study (NCT01949311). Endpoints reported include mean EASI and the proportion of patients maintaining IGA 0/1 or EASI-75. This analysis is based on a modified non-responder imputation method with patients discontinuing due to lack of efficacy (all studies) or receiving systemic rescue treatment (SOLO 1/2; SOLO-CONTINUE) considered as non-responders. At Week 16, 94% of optimal responders had mild AD (EASI ≤7). Patients maintained response across dupilumab arms through Week 52 (IGA 0/1 or EASI-75 q2w/q4w/q8w: 92%/78%/91%; EASI: 3.0/4.1/4.6) up to Week 112 (IGA 0/1 or EASI-75: 98%/95%/95%; EASI: 1.6/0.9/2.3). About half of patients rerandomized to placebo in SOLO-CONTINUE showed loss of optimal response at Week 52 for IGA 0/1 or EASI-75 (53%) followed by rapid improvement after dupilumab reinitiation (Week 56: IGA 0/1 or EASI-75: 92%) that was sustained to Week 112 (IGA 0/1 or EASI-75: 95%; EASI: 0.9). Long-term dupilumab treatment in adults with AD demonstrated maintenance of optimal response over 2 years with sustained improvement in clinical signs. Efficacy was rapidly regained after 36 weeks of withdrawal.

### *P8.2*[#457]

### DUPILUMAB MONOTHERAPY PREVENTS FLARES AND PROVIDES SUSTAINED CONTROL OF ATOPIC DERMATITIS OVER 1 YEAR ACROSS VARIOUS DOSE REGIMENS

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Disease control in atopic dermatitis (AD) can be defined as absence of flares (worsening of disease requiring escalation of treatment), an important goal for both physicians and patients. We report the efficacy of dupilumab monotherapy to prevent flares and maintain disease control in adults treated with various dosing frequencies during the maintenance phase. In this post hoc analysis, adults with moderate-to-severe AD who received dupilumab 300 mg q2w in SOLO 1/2 (NCT02277743/NCT02277769) and achieved optimal response of clear/almost clear skin (Investigator's Global Assessment 0/1) and/or ≥75% reduction from baseline in Eczema Area and Severity Index at Week 16, were rerandomized in SOLO-CONTINUE (NCT02395133) for an additional 36 weeks to dupilumab 300 mg monotherapy (q2w [n = 80], q4w [n = 41], q8w [n = 39]) or placebo (n = 39). This analysis reports the proportions of flare-free patients (no topical or systemic rescue treatment) and those not using topicals during SOLO-CONTINUE. Data are presented as observed. Around 80–90% of patients did not use topical rescue treatment over 1 year of dupilumab monotherapy, regardless of maintenance dose frequency (Week 52: q2w, 90%; q4w, 79%; q8w, 89%). About 2/3 (63%) of patients rerandomized to placebo did not use topical rescue treatment. During the maintenance period, the proportion of flare-free patients remained high and stable across dupilumab arms (q2w, 83%; q4w, 78%; q8w, 79%) compared with those rerandomized to placebo (41%). Treatment with dupilumab monotherapy over 1 year prevented flares in most patients who were optimal responders at Week 16, across maintenance dose frequencies (q2w, q4w, q8w) compared with placebo.

### *P8.3*[#334]

### REAL-WORLD TREATMENT PATTERNS OF PATIENTS WITH ATOPIC DERMATITIS USING ADVANCED TREATMENTS IN JAPAN

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Patients with moderate-to-severe atopic dermatitis (AD) often have significant disease burden. Advanced treatment options have expanded with the recent approval of oral Janus kinase inhibitors (JAKis); real-world data on their use are limited, particularly in Asian populations. To evaluate real-world treatment patterns of dupilumab and oral JAKi use in patients with moderate-to-severe AD in Japan. This retrospective and observational study used medical and pharmacy claims from the Japanese Medical Data Center database. The study population included patients with an AD diagnosis who newly initiated dupilumab (≥15 years old) or an oral JAKi (baricitinib, upadacitinib, or abrocitinib; ≥12 years old) from December 25, 2020 to August 31, 2021. All patients had continuous health plan enrollment for 1 year before and 6 months after treatment start. 620 dupilumab initiators and 59 oral JAKi initiators (mean [SD] age: 35.3 [13.3] and 36.4 [12.6] years; 67.1% and 84.7% male, respectively) were included. Most patients used topical treatments in the 1 year before treatment initiation, including very strong topical corticosteroids (dupilumab: 89.4% and oral JAKi: 76.3%), topical calcineurin inhibitors (45.2% and 30.5%), and topical JAKi (delgocitinib; 46.8% and 61.0%). Six months after treatment initiation, 90.8% of dupilumab users and 71.2% of oral JAKi users persisted on their respective treatments. 3.2% of dupilumab initiators had discontinued and 3.2% switched treatment within 6 months; 10.2% of oral JAKi initiators had discontinued and 13.6% switched treatment. High persistence rates were observed among oral JAKi and dupilumab users in re-al-world practice in Japan. The substantial rate of persistence and low rates of discontinuation or switching among dupilumab users may suggest ongoing effectiveness and tolerability of treatment.

### *P8.4*[#373]

## EFFECTIVENESS OF NON-LIVE RECOMBINANT HERPES ZOSTER VACCINE IN REDUCING HERPES SIMPLEX VIRUS REACTIVATION IN ATOPIC DERMATITIS PATIENTS TREATED WITH JANUS KINASE INHIBITORS

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Janus kinase inhibitors (JAKi) are novel drugs that have shown significant efficacy in treating atopic dermatitis (AD). However, one notable side effect is the increased risk of herpes simplex virus (HSV) reactivation. There have been reports suggesting that the herpes zoster vaccine may prevent HSV reactivation, but its effect on patients using JAKi has not been reported. This study aims to evaluate the efficacy of the non-live recombinant herpes zoster vaccine (RZV) in reducing HSV reactivation in patients with AD treated with JAKi, despite being primarily a herpes zoster vaccine. Five patients with AD undergoing JAKi treatment who reported frequent recurrences of HSV infections were selected for the study. The patients received two intramuscular injections of RZV, administered one month apart, while they were under JAKi treatment. Data on HSV recurrence before and after vaccination were compared to assess the impact of the vaccine. Before vaccination, patients experienced an average of 1.57 HSV recurrences per 6- month period. Following vaccination, the average recurrence rate significantly decreased to 0.2 episodes per patient during the 6-month period. The significant reduction in HSV recurrence following vaccination suggests a potential cross-reactivity based on the immunological properties shared among HSV1, HSV2, and varicella zoster virus, which are all members of the Alphaherpesvirinae subfamily. This cross-reactivity may enhance the immune response against HSV reactivation in patients treated with JAKis. The RZV appears to effectively reduce the recurrence of HSV in AD patients treated with JAKi. This approach has the potential to improve patient outcomes and lessen the burden of HSV reactivation in this vulnerable population. Further studies with larger sample sizes would be needed to confirm these findings.

### *P8.5*[#374]

## REAL-WORLD EXPERIENCE ON EFFICACY AND SAFETY OF ABROCITINIB IN PATIENTS WITH ATOPIC DERMAITITS IN KOREA

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Abrocitinib, a JAK-1 selective inhibitor, is approved for the treatment of moderate-to-severe atopic dermatitis (AD). While many studies have been conducted on the real-world experience of abrocitinib on safety and efficacy, they often involve small sample sizes, and the data is primarily on Caucasian populations. This study aims to assess the real-world efficacy and safety of abrocitinib in South Korean patients in a single center with moderate-to-severe AD. A retrospective chart review was conducted at the National Medical Center from September 2022 to April 2024. 57 patients with AD treated with abrocitinib for at least 16 weeks were included in the study. Efficacy was measured by achieving Eczema Area and Severity Index (EASI) 50, EASI 75, and EASI 90 at weeks 2 and 16, compared to baseline. Safety was assessed by monitoring abnormal physical examinations or blood test alterations throughout the study. 57 patients completed 16 weeks of abrocitinib treatment in the analysis. The mean EASI score significantly decreased after 16 weeks. At week 16, 94.2%, 71.2% and 26.9% of AD patients achieved EASI 50, EASI 75, and EASI 90, respectively. Additionally, Of the 21 patients who had previously failed biologics or other JAK inhibitors, 90.4%, 66.6% and 23.8% achieved EASI 50, EASI 75 and EASI 90, respectively. Further analysis of the EASI breakdown showed reductions of more than 80% in all body regions, with lichenification showing the greatest reduction in symptoms at 89.7%. The most common adverse event was acne, reported in 21 patients (36.8%), followed by urticaria in 14 patients (24.6%). Abrocitinib demonstrates significant efficacy and safety in the treatment of moderate-to-severe AD in the real-world, including in patients who have not responded to other targeted therapies.

### *P8.6*[#454]

## TREATMENT WITH TRALOKINUMAB PROVIDES LONG-TERM CONTROL OF HEAD AND NECK ATOPIC DERMATITIS

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Head and neck (H&N) AD is especially burdensome and challenging to treat. Tralokinumab, a high-affinity monoclonal antibody that neutralizes IL-13, is approved for treatment of moderate-to-severe AD. Recent real-world studies have observed tralokinumab effectiveness for H&N AD. We evaluated the impact of long-term tralokinumab treatment on H&N AD and the association between improvements in H&N AD and QoL. This post hoc analysis included data from adults with moderate-to-severe AD continuously treated with tralokinumab for up to 4 years (up to 52 weeks in ECZTRA 1 or ECZTRA 2 plus up to 152 weeks in ECZTEND). Outcomes included body region subscores of EASI (H&N, upper limbs [UL], trunk, lower limbs [LL]) and DLQI. Correlations were assessed with Spearman's correlation coefficient (ρ). By Week 152 of ECZTEND, 80.6% and 81.7% of patients with mild (H&N EASI ≥1) or severe (H&N EASI ≥4) H&N AD at baseline achieved ≥75% improvement in H&N EASI, respectively. Similarly, 86.1% and 75.6% of patients with mild or severe H&N AD at baseline achieved H&N EASI ≤1, respectively, by Week 152 of ECZTEND. Improvements were comparable across body region median EASI subscores at Week 152 of ECZTEND (H&N, 0.2; UL, 0.2; trunk, 0.0; LL, 0.0). At Week 16, improvements in H&N EASI were correlated with total DLQI improvements (ρ=0.42), with the strongest numerical correlations observed for DLQI questions regarding skin discomfort (ρ=0.39) and embarrassment due to skin (ρ=0.37). Tralokinumab treatment for up to 4 years improved H&N EASI regardless of baseline H&N AD severity. Improvements in H&N EASI were similar to improvements observed for other body regions and were correlated with DLQI improvements, in particular, DLQI components specific to skin discomfort and embarrassment.

### *P8.7#305*

## REAL-WORLD DATA ON SHORT-TERM EFFICACY IN PATIENTS WITH ATOPIC DERMATITIS TREATED WITH ABROCITINIB

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Abrocitinib, an oral JAK-1 inhibitor and a well-studied drug. In pivotal trials JADE abrocitinib demonstrated significant improvement in patients with moderates to severe atopic dermatitis (M2SAD). There is a need for data on patients starting abrocitinib therapy for M2SAD in a real-world setting, to complement clinical trial findings. This analysis assessed the short-term efficacy and safety of abrocitinib in an ongoing prospective observational registry of patients aged ≥12 years starting commercially available abrocitinib therapy for M2SAD. Between December 2023 and May 2024, 155 patients were enrolled including 42 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). In the registry 103 patients were assigned to abrocitinib 100 mg and 52 to abrocitinib 200 mg once daily in combination with topical therapy. The endpoints were the proportion of patients who had achieved an IGA response 0/1 (with ≥2-grade improvement from baseline) and EASI-75 responses at weeks 4 and 8 of treatment. Safety was also assessed. At weeks 4 and 8, improvements occurred with both doses of abrocitinib regardless of baseline disease severity. IGA 0/1 response was observed in 27,7% of patients with abrocitinib 200 mg and 11,6% with abrocitinib 100 mg and in 34,8% of patients with abrocitinib 200 mg and 20% with abrocitinib 100 mg at weeks 4 and 8 respectively. EASI-75 was achieved in 49.0% of patients with abrocitinib 200 mg and 27.7% with abrocitinib 100 mg and in 58.06% of patients with abrocitinib 200 mg and 39.35% with abrocitinib 100 mg at weeks 4 and 8 respectively. Abrocitinib safety profile was favorable with no unexpected safety signals. Abrocitinib in combination with topical therapy provided rapid and clinically meaningful improvements in patients with M2SAD which seems very important for this difficult-to-treat patient population.

### *P8.8#307*

## ABROCITINIB IMPROVES PATIENT-REPORTED OUTCOMES IN PATIENTS WITH MODERATE TO SEVERE ATOPIC DERMATITIS: DATA FROM ALL-RUSSIA RE-DERMA REGISTRY

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Atopic dermatitis (AD) has a multidimensional burden and is associated with different symptoms which negative affect the quality of life of patients. JAKis are a new class of systemic treatments for AD and abrocitinib is once daily, oral JAK1 inhibitors that block IL-4 and IL-13, cytokines involved in the pathogenesis of AD, downstream; RE-DERMA is an ongoing prospective, observational registry of patients aged ≥12 years starting commercially available abrocitinib therapy for moderate to severe atopic dermatitis (M2SAD). 155 patients enrolled including 42 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). We assessed the effect of abrocitinib 100 mg (n=103) and abrocitinib 200 mg (n=52) with topical therapy on patient-reported outcomes (PROs) for 12 weeks period. The endpoints were the proportion of patients who had achieved ≥4-point improvement in Skin Pain Numeric Rating Scale and on the Dermatology Life Quality Index from baseline; change in Patient Oriented Eczema Measure from baseline. The proportion of patients achieving ≥4-point improvement in Skin Pain Numeric Rating Scale from baseline was 34,9% and 50.0% for abrocitinib 100 mg and 200 mg respectively. The proportion of patients achieving ≥4-point improvement from baseline on the Dermatology Life Quality Index was 53.4% and 71.15% for abrocitinib 100 mg and 200 mg respectively. The least squares mean (LSM) change in Patient Oriented Eczema Measure from baseline was -7.9 and -6.8 for abrocitinib 100 mg and 200 mg respectively. Abrocitinib in combination with local therapy quickly and effectively improved PROs in adults and adolescents with M2S AD, including skin pain. The registry is supported by a Pfizer research grant.

***P8.9*** *#308*

## DYNAMICS OF ANXIETY AND DEPRESSION SCORES IN PATIENTS WITH MODERATE AND SEVERE ATOPIC DERMATITIS FOLLOWING ABROCITINIB THERAPY: REAL-WORLD INSIGHTS

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The effect of abrocitinib, an oral JAK-1 inhibitor, on improving of anxiety and depression in patients with Atopic dermatitis (AD) was demonstrated in pivotal trials JADE in patients with moderate to severe AD (M2SAD). There is a need for data on patients starting abrocitinib therapy for M2SAD in a real-world setting, to complement clinical trial findings. We evaluated the effect of abrocitinib on AD-related anxiety and depression among patients receiving abrocitinib 100 mg (n=103) and abrocitinib 200 mg (n=52) in combination with topical therapy using data from all-Russian registry of patients aged ≥12 years starting commercially available abrocitinib therapy for M2SAD. 155 patients were enrolled including 42 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). Comorbid mood symptoms were assessed with Hospital Anxiety Depression Scale (HADS), a 14-question instrument measuring anxiety and depression (7 items each). Each question is scored between 0 and 3, with a maximum score of 21 for anxiety or depression. Mean baseline HADS-Anxiety score was 4.2 and 5.0 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively; the mean baseline HADS-Depression score was 3.3 and 4.2 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively. At Week 12, HADS-Anxiety change from baseline score was -2.15 and -0.89 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively; the HADS-Depression change from baseline score was -1.77 and -0.95 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively. Comorbid mood symptoms such as anxiety and depression in patients with M2SAD improved with abrocitinib treatment as measured by HADS and it seems very important to reduce the psychiatric burden for this difficult-to-treat patient population. The registry is supported by a Pfizer research grant.

***P8.10*** *#310*

## ABROCITINIB IMPROVES PATIENT-REPORTED OUTCOMES AMONG ADOLESCENTS WITH MODERATE TO SEVERE ATOPIC DERMATITIS: A MULTICENTER RUSSIAN REAL-WORLD EXPERIENCE

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Moderate-to-severe Atopic Dermatitis (M2SAD) in adolescents is associated with high disease burden, including pruritus, pain, sleep disturbance, mental health problems and reduced quality of life (QoL). Abrocitinib, an oral JAK-1 inhibitor was recently approved for treatment of adolescent M2SAD. To evaluate the impact of abrocitinib on patient-reported signs/symptoms, including sleep loss and QoL among adolescents with M2SAD in the real practice. RE-DERMA is an ongoing, multicenter, prospective, real-world registry of patients aged ≥12 years initiating available abrocitinib treatment for M2SAD. 42 adolescents included aged from ≥ 12 to < 17 years (males 23 (54.7%), females 19 (45.3%), mean age: 15,3 years; AD duration: 12,2 years). We assessed the effect of abrocitinib 100 mg (n=28) and 200 mg (n=14) with topical therapy for 12 weeks period. Treatment outcomes was assessed by Patient-Oriented Eczema Measure (POEM), Atopic Dermatitis Visual Analog Scale for sleep and Children's Dermatology Life Quality Index (CDLQI). At week 12, 78.6% and 75.0% adolescents treated with abrocitinib 200 mg or 100 mg respectively achieved a ≥4-point improvement from baseline in the POAM; 71.4% and 64.3% adolescents treated with abrocitinib 200 mg or 100 mg respectively achieved a ≥6-point improvement from baseline in the CDLQI. Significant improvements in SCORing Atopic Dermatitis Visual Analog Scale for sleep loss scores were demonstrated in all patients compared to baseline. Patient-reported symptoms, including reduction of sleep loss and quality of life, were substantially improved with abrocitinib in combination with topical therapy for 12 weeks period in adolescents with M2SAD. The registry is supported by Pfizer research grant.

***P8.11*** *#311*

## REAL-WORLD EXPERIENCE OF SWITCHING ATOPIC DERMATITIS TREATMENT TO ABROCITINIB AFTER PRIMARY OR SECONDARY DUPILUMAB FAILURE

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Dupilumab, an anti–interleukin 4 receptor α monoclonal antibody, approved for the treatment of patients with moderate-to-severe atopic dermatitis (M2SAD). Although dupilumab is highly effective for most patients, some patients with AD may need to discontinue treatment with dupilumab (due to inadequate efficacy, intolerable side-effects, patient choice, or other reasons). One viable alternative for these non-responders is abrocitinib, an oral, once-daily, JAK1 selective inhibitor. We present a case series of 11 patients who exhibited treatment failure with dupilumab from an ongoing, multicentre, prospective, real-world registry of patients aged ≥12 years with M2SAD. 8 patients (73%) experienced a primary failure, without significant improvement in any moment during dupilumab treatment, while 3 patients (27%) presented secondary failure, achieving at least a 75% reduction in EASI at week 16. At 12 weeks after switching to abrocitinib 200 mg in combination with topical therapy, the proportion of responders was observed to increase: for IGA 0/1 - 54.5%, EASI-75 - 81.8%. AD patients who have previously failed dupilumab treatment may be considered "difficult-to-treat" cases. A switch in the AD pathogenic pathway via abrocitinib might represent a reasonable therapeutic alternative for those patients' refractory to dupilumab. The registry is supported by Pfizer research grant.

***P8.12*** *#312*

## THE EFFECT OF ABROCITINIB ON DIFFERENT PHENOTYPES OF ATOPIC DERMATITIS: A MULTICENTER RUSSIAN REAL-WORLD EXPERIENCE

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Abrocitinib, an oral, once-daily, JAK1 selective inhibitor, approved as a treatment for moderate to severe atopic dermatitis (M2SAD). Currently, although its therapeutic efficacy and favorable safety profile have been widely elucidated, data on real-world experience with the abrocitinib are only beginning to emerge. The aim of this analysis is to determine the effect of abrocitinib for the therapy of different AD subtypes in a real-world setting. RE-DERMA is an ongoing 3-year, prospective, observational registry of patients aged ≥12 years initiating commercially available abrocitinib therapy for M2SAD. Between Dec 2023, and April 2024, 147 patients were enrolled including 41 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). We classified patients into clinical subtypes: classic (n=73), face and neck AD (n=49), and hand dermatitis (n=25). All patients were assigned to abrocitinib 100 mg or 200 mg once daily in combination with topical therapy. Stratifying by clinical phenotype, we found a notable improvement after 12 weeks of treatment in every clinical subtype for assessed scores mentioned above. IGA 0/1 response was observed in 43,8%, 24,5%, 36,0% of patients with classic, face and neck AD, and hand dermatitis respectively. EASI-75 was achieved in 63,0%, 40,8%, 52,0% of patients with classic, face and neck AD, and hand dermatitis respectively. Abrocitinib safety profile was favorable with no unexpected safety signals. The greatest improvement was observed in patients with classic phenotype, while the clinical phenotype with the worst response was face and neck AD. AD with head and/or neck involvement is difficult-to-treat region, abrocitinib has demonstrated efficacy; however, longer therapy is required for patients with head and neck involvement. The registry is supported by Pfizer research grant.

***P8.13*** *#313*

## REAL-WORLD CASE SERIES OF ABROCITINIB IN ADULTS WITH SEVERE ATOPIC DERMATITIS

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Abrocitinib is an oral JAK inhibitor approved for the management of moderate to severe atopic dermatitis (M2SAD) of patients aged ≥ 12 years. Experience with the use of abrocitinib in real practice is accumulating, but it is still limited. We analyzed data from a cohort of adults with severe AD treated with abrocitinib 200 mg. The data source became an ongoing 3-year, prospective, observational registry of patients aged ≥12 years initiating commercially available abrocitinib therapy for M2SAD. Between Dec 2023, and April 2024, 147 patients were enrolled including 41 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). The proportion of patients with moderate disease (58%) was higher than the proportion of patients with severe disease (42%), as measured by IGA score. All patients with severe AD were assigned to abrocitinib 200 mg once daily in combination with topical therapy. IGA response 0/1 and EASI-75 response at weeks 4, 8, 12 were used to assess the severity of AD. In the analysis 62 patients with severe AD included. All of them had been treated with corticosteroids or cyclosporine, 11 patients had received dupilumab without achieving acceptable control. At weeks 4, 8 and 12 improvements occurred and remained over time. EASI 75 was reached by 48,4%, 58,06% and 62,9% of patients at weeks 4, 8 and 12 respectively. IGA 0/1 response was observed in 27,4%, 35,5% and 43,5% of patients at weeks 4, 8 and 12 respectively. All patients reported rapid pruritus relief, which in 75% of patients was absolute; in these patients the mean time to control was 4.45 days. Abrocitinib 200 mg in combination with topical therapy provided rapid and clinically meaningful improvements in patients with severe AD which seems very important for this difficult-to-treat patient population. The registry is supported by Pfizer research grant.

***P8.14*** *#314*

## CONCEPTION AND REALIZATION OF THE RUSSIAN ATOPIC DERMATITIS REGISTRY RE-DERMA

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Atopic dermatitis (AD) is a chronic inflammatory skin disease that occurs in episodes. It often affects the flexures, scalp, face and hands and is accompanied by distressing itching which can lead to significant psychosocial impairment and a severe reduction of quality of life. AD is associated with an increased rate of atopic and non-atopic comorbidities. Objective. The aim is to conceptualize and establish a web-based, large-scale AD patient registry for dermatology practices in Russia. The registry was developed by experts from dermatology and allergology in collaboration with digital technology provider. Multiple investigational sites in Russia will recruit around 1000 patients with AD over a period of three years. The registry provides real-world data on the efficacy and safety of AD therapeutics options. AD registry based on electronic, web-based data collection in a standardized eCRF was conceptualized and a core data set of variables assed by physicians was specified. The IT solution permits multiple timepoints of documentation and largely visualized data recordings. Continous analyses of enrollment status and baseline data are possible for each center. Consensus reports, expert recommendations, statistics report and annual updates from the registry are the communication tools. RE-DERMA for AD is a novel registry designed especially shaped for office-based dermatologists and allergologists. Such registries are important and scientifically accepted methods to obtain insights in many clinical and epidemiological research questions. The registry is supported by Pfizer research grant.

***P8.15*** *#309*

## REAL-WORLD EFFICACY OF ABROCITINIB IN ADULT AND ADOLESCENT PATIENTS WITH ATOPIC DERMATITIS: DATA FROM RE-DERMA REGISTRY

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Abrocitinib an oral JAK-1 inhibitor, in pivotal trials JADE demonstrated significant improvement in patients with moderates to severe atopic dermatitis (M2SAD). There is a need for data on patients starting abrocitinib therapy for M2SAD in a real-world setting. RE-DERMA is an ongoing, prospective, observational study of patients aged ≥12 years initiating available abrocitinib treatment for M2SAD. 155 patients enrolled including 42 adolescents (mean age: 28,4 years (SD 12,2); AD duration: 11,5 years). We assessed the effect of abrocitinib 100 mg (n=103) and abrocitinib 200 mg (n=52) with topical therapy for 12 weeks period. At week 12, improvements occurred with abrocitinib regardless of baseline disease severity. IGA 0/1 response was observed in 24,3% of patients with abrocitinib 100 mg and 44,2% with abrocitinib 200 mg. EASI-75 was achieved in 40.7% of patients with abrocitinib 100 mg and 63.4% with abrocitinib 200 mg. The proportion of patients achieving ≥4-point improvement in Skin Pain Numeric Rating Scale from baseline was 34,9% and 50.0% for abrocitinib 100 mg and 200 mg respectively. The proportion of patients achieving ≥4-point improvement from baseline on the Dermatology Life Quality Index was 53.4% and 69.2% for abrocitinib 100 mg and 200 mg respectively. The least squares mean (LSM) change in Patient Oriented Eczema Measure from baseline was -7.9 and -6.8 for abrocitinib 100 mg and 200 mg respectively. HADS-Anxiety change from baseline score was -2.15 and -0.89 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively; the HADS-Depression change from baseline score was -1.77 and -0.95 for patients with abrocitinib 100 mg and abrocitinib 200 mg respectively. In this interim analysis, abrocitinib demonstrated a rapid onset of disease control in patients with M2SAD. The registry is supported by Pfizer research grant.

***P8.16*** *#396*

## DUPILUMAB REDUCES LESION SEVERITY AND EXTENT IN CHILDREN <12 YEARS OF AGE WITH MODERATE-TO-SEVERE AD: INTERIM RESULTS FROM THE PEDISTAD REAL-WORLD REGISTRY

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In clinical trials, dupilumab has consistently improved disease severity in children with moderate-to-severe atopic dermatitis (AD). To examine the impact of systemic treatments on the individual anatomical regions that comprise the Eczema Area and Severity Index (EASI) score. PEDISTAD (NCT03687359) is an international, longitudinal, observational 10-year registry study of patients aged < 12 years with moderate-to-severe AD. This interim analysis reports mean EASI scores of the head, neck, and the trunk areas at therapy start and last observation. A total of 207 patients received dupilumab, 127 received methotrexate and 139 received cyclosporine. The mean observation period was 17.0 months, 18.7 months, and 14.3 months for dupilumab, methotrexate and cyclosporine, respectively. A numerically greater improvement was observed in mean (SE) EASI scores for the head and neck area of dupilumab patients (therapy start: 2.0 [0.2]; last observation: 0.7 [0.1]) than in patients receiving methotrexate (therapy start: 2.0 [0.2]; last observation: 1.0 [0.2]) and cyclosporine (therapy start: 2.2 [0.2]; last observation: 1.6 [0.2]). A similarly greater improvement was observed in the mean (SE) EASI scores of the trunk in patients receiving dupilumab (therapy start: 4.7 [0.3]; last observation: 1.3 [0.2]) than methotrexate (therapy start: 4.1 [0.3]; last observation: 2.2 [0.3]) and cyclosporine (therapy start: 4.5 [0.3]; last observation: 3.6 [0.4]). Adverse events were experienced by 23.7%, 30.5% and 32.6% of patients receiving dupilumab, methotrexate and cyclosporine, respectively. Children with moderate-to-severe AD receiving dupilumab, methotrexate, or cyclosporine had improvement in AD lesion severity and extent in individual anatomical regions, with the greatest numerical improvement observed in those receiving dupilumab.

***P8.17*** *#449*

## DUPILUMAB EFFICACY AND SAFETY UP TO 2 YEARS IN CHILDREN AGED 6 MONTHS TO 5 YEARS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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While previous studies of long-term dupilumab treatment for adults with moderate to severe atopic dermatitis (AD) demonstrated sustained efficacy, additional data in children are needed. To present efficacy outcomes of dupilumab treatment in children with moderate to severe AD. Children aged 6 months to 5 years with moderate-to-severe AD were enrolled in a phase 3 open label extension (OLE) study (NCT02612454). Patients received dupilumab every 4 weeks (5 to <15 kg: 200 mg; 15 to <30 kg:300

mg). Topical AD treatments were allowed. Mean (SD) SCORing AD (SCORAD) score and proportion of patients who achieved 75%/90% improvement in Eczema Area and Severity Index (EASI-75/90) score were assessed at each visit from OLE baseline to 2 years. Safety was also evaluated. 180 patients were included in the 6 months to 5 years cohort. Mean SCORAD (SD) scores reduced from OLE baseline (46.8 [22.8]) to Week 52 (20.5 [13.3]) and week 104 (20.2 [10.9]), indicating improvement. A similar trend was seen in EASI scores: 29.4% of patients achieved EASI-75 at OLE baseline, improving to 85.1% at Week 52 and 92.1% at Week 104; 14.4%, 59.6% and 65.3% achieved EASI-90 at baseline, Week 52 and Week 104, respectively. Treatment-emergent adverse events (TEAEs) were observed in 87.8% of patients (intensity: mild 24.4%, moderate 52.2%, severe 11.1%). TEAEs assessed by study investigators as dupilumab related were reported in 18.3% of patients; most prevalent were conjunctivitis (2.8%), allergic conjunctivitis (1.7%), nasopharyngitis (1.7%) and urticaria (1.7%). Serious TEAEs assessed as related to dupilumab were observed in 0.6% of patients. Treatment with dupilumab for up to 2 years in young children with moderate-to-severe AD demonstrated sustained improvement in clinical signs as demonstrated by SCORAD and EASI-70/90. Results are consistent with the known dupilumab safety profile.

***P8.18*** *#439*

## REAL-WORLD TREATMENT OUTCOMES OF SYSTEMIC TREATMENTS FOR MODERATE-TO-SEVERE ATOPIC DERMATITIS IN CHILDREN AGED LESS THAN 12 YEARS: 4-YEAR RESULTS FROM THE PEDISTAD REGISTRY

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Since the introduction of targeted biologic therapies, like dupilumab, few real-world studies have shown the long-term effect of systemic therapies on clinician reported outcomes in children with atopic dermatitis (AD). PEDISTAD (NCT03687359) is an ongoing, international, longitudinal, observational 10-year registry study in patients with moderate-to-severe AD aged <12 years at enrollment, whose AD is not adequately controlled by, or for whom topical prescription therapies are not medically advised. This interim 4-year analysis reports the effect of dupilumab, methotrexate (MTX) and cyclosporine (CsA) on clinician reported outcomes using Eczema Area and Severity Index (EASI) total score and percentage affected body surface area (BSA) score. The number of discontinuations and safety (adverse events [AEs]) were also evaluated. In total 254, 136 and 145 patients received dupilumab MTX and CsA, respectively. Mean EASI (standard error [SE]) scores at first and last observation for dupilumab, MTX and CsA were: 19.3 (0.9) and 5.2 (0.5); 17.1 (1.1) and 8.5 (0.9); 19.1 (1.0) and 13.3 (1.2), respectively. Mean percentage BSA (SE) at first and last observation for dupilumab, MTX and CsA were: 38.1 (1.6) and 14.5 (1.5); 34.6 (1.8) and 18.7 (1.9); 40.6 (2.0) and 27.9 (2.3), respectively. At the 4-year follow-up cumulative discontinuation rates for dupilumab, MTX and CsA were 14.9, 45.7 and 63.7, respectively. The percentage of patients treated with dupilumab, MTX and CsA that reported AEs or serious AEs were: 29.4% and 2.4%; 31.4% and 2.1%; 32.9% and 2.7%, respectively. Patients aged <12 years treated with dupilumab had a numerically greater improvement in AD signs, lower discontinuation rates, and lower percentage of AEs compared to MTX and CsA.

***P8.19*** *#356*

## COMPLICATIONS OF DUPILUMAB THERAPY: A LITERATURE REVIEW OF SIDE EFFECTS AND CLINICAL CASE REPORT OF RENAL ADVERSE EVENT

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Dupilumab, a monoclonal antibody targeting interleukin-4 receptor alpha, has revolutionised atopic dermatitis, but it is associated with uncommon adverse events, including most commonly renal complications; with the possible relation of its pathway in IgA nephropathy. To review the literature on dupilumab side effects, including the most common of which are renal, shedding light on renal outcomes. To present a clinical case report of patient admitted with renal sclerosis linked to dupilumab therapy. Comprehensive literature search using PubMed, Cochrane Library, clinical trials, drug safety data, for pharmaco vigilance, clinical studies and case reports on dupilumab associated adverse events. The literature review identified a couple of case reports relating dupilumab with kidney conditions and renal impairment; the highest number of adverse events being related to the renal system, as well as treatment-emergent adverse events. The clinical case report presented involved a 20-year-old male with a history of atopic dermatitis and asthmatic who developed acute renal sclerosis IgA vasculitic nephropathy after initiating dupilumab. Dupilumab therapy while effective in managing atopic dermatitis may lead to complications including renal impairment as evidenced by the review and case. Clinicians should be vigilant for renal adverse events and consider monitoring renal function.

***P8.20*** *#381*

## ASSOCIATION OF TRALOKINUMAB AND ADALIMUMAB: GOOD TOLERANCE AND EFFICACY IN A CASE OF SEVERE ATOPIC DERMATITIS AND JUVENILE IDIOPATHIC ARTHRITIS

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Atopic dermatitis (AD) is a chronic skin condition characterized by itching and impaired skin barrier function. Its global prevalence has increased, necessitating effective treatments. Tralokinumab, a monoclonal antibody that blocks IL-13, has proven to be well-tolerated and effective in a case of severe AD in a patient also treated with adalimumab for juvenile idiopathic arthritis. This combination of treatments had not been previously reported. A 17-year-old high school student with severe atopic dermatitis since childhood, initially treated with topical corticosteroids and tacrolimus, also had juvenile idiopathic arthritis treated with adalimumab. Despite treatment with dupilumab for 17 months, her dermatitis remained poorly controlled, with persistent pruritus, blepharitis, conjunctivitis, and dry skin. Dupilumab was discontinued and tralokinumab was introduced. After eight

months of combined adalimumab and tralokinumab treatment, significant clinical improvement was observed, with no adverse effects reported. Several cases have reported the combination of dupilumab with other anti-TNF alpha agents. We report the first case of combining tralokinumab and adalimumab, showing good efficacy and tolerance in severe atopic dermatitis and juvenile idiopathic arthritis. The combination appears promising for treating severe AD in patients with juvenile idiopathic arthritis. It showed good clinical and biological tolerance without major adverse effects. The combination significantly improved atopic dermatitis symptoms while maintaining adalimumab's efficacy for arthritis. This suggests it could be a valuable alternative treatment for patients with these conditions. However, further studies with larger populations are needed to confirm these results and establish precise therapeutic recommendations.

### *P8.21#402*

### CAN WE PREDICT DUPILUMAB TREATMENT OUTCOMES IN ADULT PATIENTS WITH ATOPIC DERMATITIS? A RETROSPECTIVE SINGLE-CENTER STUDY

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Dupilumab is the first biological agent approved for the treatment of moderate-to-severe atopic dermatitis (AD). Real-life data regarding the potential impact of patient-related factors on therapeutic response to dupilumab are largely unknown. To attempt to identify potential factors affecting the dupilumab treatment outcomes. A monocentric, retrospective study was performed to analyze data from adult patients with moderate-to-severe AD who started dupilumab treatment between April 2022 and January 2024. Patients' baseline factors including gender, age at dupilumab initiation, EASI, age of AD onset, duration of AD, atopic comorbidities, atopic family history, body mass index (BMI), smoking, and blood eosinophil count were analyzed with the treatment outcomes. Clinical improvement was evaluated at each follow-up (week 16, 28, 40). In total, 42 adult patients with AD (69.1% of males; mean age of 35.6 ± 13.7 years) were enrolled. At week 16, 61.9% of patients achieved an improvement of ≥75% in the Eczema Area and Severity Index from baseline (EASI-75). Early-onset AD (at <2 years of age) and smoking were significantly associated with reduced odds of achieving EASI-75 at week 16 (OR = 0.122, 95% CI: 0.023-0.650; p = 0,014, OR = 0.168, 95% CI: 0.035 – 0.795; p = 0.025, respectively). Patients with baseline eosinophilia (≥500/µL) had a better response to dupilumab at week 16 (EASI-75, OR = 4.156, 95% CI: 1.098 – 15.721; p = 0.036). At week 28, only smoking was still significantly associated with reduced odds of achieving EASI-75 (OR = 0.13, 95% CI: 0.023-0.734; p = 0.021), being not significant at week 40 (p = 0.127). Early-onset AD, smoking, and baseline eosinophilia may help to predict treatment outcomes and the time of good clinical response to dupilumab in AD. Importantly, smoking seems to reduce the effectiveness of dupilumab in the long term.

### *P8.22#461*

### ABNORMALLY ELEVATED SERUM TARC MAY PREDICT SECONDARY INEFFECTIVENESS OF SYSTEMIC JAK INHIBITORS

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JAK inhibitors (JAKIs) are used as a systemic treatment option for atopic dermatitis (AD). As serum thymus and activation-regulated chemokine (TARC) may increase during treatment with JAKIs despite improvement in clinical symptoms, some argue that TARC is not a monitoring marker. However, we see consulting patients who are suffering with worsening symptoms during treatment with JAKIs accompanied by abnormally high TARC. To examine changes in blood biomarkers and clinical symptoms over time after initiation of JAKIs, and to determine whether there is relationship. We stratified outcomes of 16 AD patients (12-72 years old) treated with JAKIs, The changes of EASI, Patient reported outcomes and commercially available blood biomarkers serum TARC, LDH, IgE, peripheral eosinophils over time were retrospectively analyzed. Outcomes were stratified to 1) symptoms controlled and no relapse in 2 cases, 2) controlled and ongoing in 1 cases, 3) inadequately controlled but ongoing in 2 cases, 4) initially effective but switched to dupilumab after secondary failure in 7 cases, 5) switched to dupilumab due to inadequate response or intolerance from the early stage in 4 cases. In patients who did not respond to JAKIs, baseline serum TARC was abnormally high and further increased after treatment with JAKIs. In group (4), TARC increased 3 to 6 months after drug starting, ranging from 2982 to 22231 pg/ml, and the increase in TARC was sustained with continued treatment, followed by worsening of symptoms and abnormal increase in serum IgE. In group (1), serum TARC was rarely elevated. Certain percentage of cases showed secondary ineffectiveness within 1 year after JAKIs starting. Abnormally high TARC levels after initiation of therapy may be a predictive marker.

### *P8.23#303*

### EFFECTIVENESS AND SAFETY OF NEMOLIZUMAB IN TREATING ATOPIC DERMATITIS AMONG JAPANESE PATIENTS: A RETROSPECTIVE STUDY AT A SINGLE CENTER

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Atopic dermatitis (AD) is a chronic condition with severe itching and inflammation. Nemolizumab, targeting IL-31RA, is approved in Japan for AD-related pruritus. It's prescribed for patients with an NRS score of 5+, EASI score of 10+, and persistent itching despite high-potency steroids and antihistamines. While trials show nemolizumab's efficacy and safety, they don't fully reflect routine practice. We analyzed its effects on 15 Japanese AD patients, providing real-world data and improvement rates. This study employed a retrospective design and included all patients treated with nemolizumab at Kindai University Hospital from August 2022 to April 2023. The cohort consisted exclusively of patients with moderate to severe AD who met the diagnostic criteria for AD. Each patient received monthly subcutaneous injections of 60 mg nemolizumab, in conjunction with either topical steroid tacrolimus or delgocitinib. Clinical data were collected at baseline, 1 month, and 4 months. Two out of 15 patients discontinued nemolizumab after one month due to worsening AD. Twelve patients showed significant skin improvements, with 62% achieving EASI-50 and 31% reaching EASI-75 at 4 months. Pruritus improved, with 40% showing a 4-point NRS improvement at 1 month and 62% at 4 months. Patient-reported symptoms and ADCT scores also decreased. Blood analysis at 6 months showed reduced LDH levels, with no significant changes in eosinophils or IgE levels. The main adverse event was worsening AD, leading to two discontinuations. No other side effects were observed. While nemolizumab generally treats AD effectively with few adverse events, some cases show exacerbated symptoms or insufficient efficacy.

### *P8.24*[#343]

## BODY WEIGHT AND TRYPTOPHAN/ KYNURENINE METABOLITES DURING TREATMENT WITH DUPILUMAB

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Weight gain has been reported in patients treated with dupilumab. The mechanism behind the weight gain is not known. Dupilumab inhibits interleukin (IL)-4 and 13 and reduces activation of IL4I1 and therefore the levels of Indole compounds and Kynurenic Acid (KA). KA has shown to increase adipose tissue energy expenditure and reduce circulating triglyceride levels. Reduction in KA metabolites could explain the weight gain during treatment with dupilumab. Our objective is to analyze weight change in relation to change in tryptophan/kynurenine metabolites during treatment with dupilumab. We used prospectively collected data from SwedAD, a Swedish national register for AD patients on systemic treatment, to investigate the correlation between weight gain and changes in tryptophan/kynurenine metabolites in patients with dupilumab. Blood samples were collected in September–October 2022 from 13 patients who had provided blood before starting dupilumab and were still on treatment. Wilcoxon's signed-rank test was used to compare baseline and follow-up measurements of tryptophan/kynurenine metabolites. Spearman's correlation test was used for assessing weight change and changes in metabolites. No adjustments for multiple testing were performed. Most AD patients (n = 13) treated with dupilumab gained weight (median 5.5 kg, IQR 2.3–11.0, mean 8.1 kg, p = 0.002) during follow-up (16-60 months). Weight gain was lower but still significant at the final follow-up/at time of second blood sample (median 1.3 kg, IQR 0.0–5.4, mean 3.6 kg, p = 0.045). No significant correlations were seen between changes in tryptophan/kynurenine metabolites and weight change. In this small pilot study of AD patients on dupilumab, we did not find a correlation between concentration of tryptophan/kynurenine metabolites and weight change.

### *P8.25*[#337]

## DUPILUMAB ASSOCIATED HEAD AND NECK DERMATITIS WITH CONJUNCTIVITIS : A CASE SERIES

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Dupilumab, a fully human monoclonal antibody directed against the shared interleukin 4 (IL-4) receptor subunit α of IL-4 and IL-13 receptors, is widely used for the treatment of moderate-to-severe atopic dermatitis (AD). The most freqeuently reported adverse events of dupilumab for treatment of AD in phase 3 clinical trials were conjunctivitis, injection site reactions and herpes infections. On the other hand, facial or neck dermatitis has not been reported in clinical trials. Yet, in clinical practices there have been increasing reports of erythematous eruptions on the head and neck associated with dupilumab. In this report, we present 3 cases of dupilumab associated head and neck dermatitis with allergic conjunctivitis during treatment of AD. The patients had histories of atopic dermatitis ranging from 4 to 6 years, and had 4 to 5 months of dupilumab treatment. After 16 to 20 weeks of dupilumab injection, the patients showed severe erythematous eruptions on the neck and face along with periocular swelling and conjunctivitis. Despite topical steroid and topical calcineurin inhibitors were used, the symptoms persisted. In addition to conjunctivitis and injection site reactions, dupilumab associated facial or neck erythema should be considered in patients presenting with facial symptoms.

### *P8.26*[#320]

## REAL-WORLD TREATMENT OUTCOMES OF DUPILUMAB AND BASELINE HEALTH ECONOMIC BURDEN IN CHILDREN AND ADOLESCENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS: RESULTS FROM THE ADOPED-STAD STUDY IN CHINA

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Atopic dermatitis (AD) is a chronic inflammatory systemic condition with skin lesions. The objectives of the ongoing ADOPED-STAD (ChiCTR2200064226) study are to understand the effectiveness and safety of dupilumab in paediatric AD patients in China. This prospective, observational study is enrolling patients with AD aged ≥6 months to <18 years, from 15 sites in China, who are prescribed dupilumab per label recommendations. Effectiveness, safety, and disease burden were analysed descriptively. This analysis included children aged ≥6 to <18 years as of the data cut-off on 15 Oct 2023. Data were reported as observed. Of 335 enrolled patients (261 aged ≥6 to <12 years, 74 aged ≥12 to <18 years), 305 completed ≥1 follow-up assessment. The baseline EASI score (mean ± SD) was 20.1 ± 11.3. In the effectiveness analysis, EASI-75 was achieved in 38.6% of patients at W4 (Week 4) and 71.5% at W12. A ≥4-point reduction from baseline in p-NRS was reported in 41.3% of patients at W4 and 59.2% at W12. In patients aged ≥12 to <18 years, the ADCT score < 7 was in 14.5% of patients at baseline, 59.3% at W4, and 74.4% at W12. Adverse events (AEs) occurred in 72 patients, 3 patients had serious AEs (up to the data cut-off). Baseline data showed 300 patients had at least one outpatient visit related to AD in the year before enrollment, averaging 4.6 ± 4.1 visits per patient at 602.8 ± 824.9 RMB per visit. In the year prior to enrollment, the average number of days absent from school or work due to AD was 3.39 ± 15.9, and the total cost for AD averaged 4799.6 ± 8424.0 RMB. In paediatric patients with AD in China, dupilumab provides improvement in signs and symptoms after 12 weeks of treatment in real-world practice and the safety profile was consistent with that previously reported. The AD-related health economic burden for those patients is high.

***P8.27*** *#467*

## TRAJECTORY OF IMPROVEMENTS IN SKIN CLEARANCE IN PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS WITH UP TO 2 YEARS OF ABROCITINIB TREATMENT: AN INTEGRATED ANALYSIS OF JADE EXTEND, A LONG-TERM EXTENSION STUDY

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Atopic dermatitis (AD) is a chronic inflammatory skin disease associated with eczematous lesions and itch which may require long-term treatment. Abrocitinib, an oral, once-daily Janus kinase 1-selective inhibitor improved skin clearance up to 112 weeks (wks) of treatment in patients (pts) with moderate-to-severe AD in a planned interim analysis of the ongoing long-term extension study, JADE EXTEND (NCT03422822). To evaluate fluctuations in AD severity over time in pts with moderate-to-severe AD treated with abrocitinib for up to 2 years. This planned interim analysis included pts with moderate-to-severe AD from qualifying trials JADE MONO-1 (NCT03349060), MONO-2 (NCT03575871), COMPARE (NCT03720470), TEEN (NCT03796676), MOA (NCT03915496), and DARE (NCT04345367) who enrolled in EXTEND (data cutoff date: September 5, 2022). AD severity was assessed by Eczema Area and Severity Index (EASI) score at baseline (BL) and Wks 12, 24, 48, 96, and 112. AD was categorized as mild (EASI ≤7), moderate (>7–≤21), or severe (>21). Of pts with available data at BL and Wk 12, 31% and 69% had moderate and severe AD at BL in the abrocitinib 200-mg (293/935; 641/935) and 100-mg arms (225/731; 506/731). At Wk 12, the proportions of pts with moderate and severe AD decreased to 18% (168/935) and 4% (41/935) in the abrocitinib 200-mg arm, and 28% (206/731) and 12% (90/731) in the 100-mg arm; most pts (≥60%) with moderate-to-severe AD at BL had mild AD at Wk 12. Of pts with Wk 96 data who reached Wk 112, 17% (58/349) and 1% (5/349) had moderate and severe AD in the abrocitinib 200-mg arm; in the 100-mg arm, proportions were 17% (64/366) and 5% (18/366). Abrocitinib resulted in rapid and sustained improvements in skin clearance over the course of treatment in pts with moderate-to-severe AD, with most pts achieving a mild phenotype at Wk 12.

***P8.28*** *#405*

## ANALYSIS OF SKIN MICROBIOTA AND TRYPTOPHAN METABOLITES IN CHILDREN WITH ATOPIC DERMATITIS

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Previous studies have identified differences in the skin surface microbiome between healthy individuals and patients with atopic dermatitis (AD). However, because the skin microbiome varies greatly depending on whether the skin area is dry, wet, or oily, research is needed for each specific skin area. To date, there have been few in-depth studies of the skin microbiome of pediatric AD patients. This study aimed to identify skin microbiota specific to AD groups and investigate tryptophan metabolites to identify candidates that could potentially be used as AD treatments. A total of 57 volunteers were recruited from the Dermatology Department of Hallym University, Kangnam Sacred Heart Hospital, Seoul, Korea. The AD group was selected according to the diagnostic criteria of Hanifin and Rajka. Skin samples were collected from the nose, abdomen, and antecubital fossa using swabs and tapping methods. The skin microbiome was analyzed using shotgun metagenomics, and tryptophan metabolites were assessed via methanol extraction. Overall, differences in the microbiome between those with and without AD were more pronounced than differences across skin regions (nose, abdomen, and antecubital fossa). However, specific microbiota showed distinct differences in each skin region. In particular, new findings compared to previous studies confirmed that Prevotella spp. form a network in the AD group. Among the tryptophan metabolites, xanthurenate was found to be significantly decreased in all three skin regions of the AD group compared to the three regions of normal skin. The skin surface microbiome and associated metabolites differ significantly between patients with atopic dermatitis and healthy individuals. In AD patients, Prevotella spp. form a dominant network. Follow-up research focusing on this discovery may lead to the development of new treatments for AD.

***P8.29*** *#333*

## SWITCHING FROM DUPILUMAB TO TRALOKINUMAB OR JAK INHIBITORS IN CASES OF OCULAR AND/OR FACIAL ADVERSE EVENTS: A REAL-LIFE EXPERIENCE

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Dupilumab in atopic dermatitis (AD) may be discontinued in case of Dupilumab-induced ocular adverse events (DOAE) or facial redness (DFR). Switching to Tralokinumab or JAK inhibitors (JAKi) are options. Objective: To evaluate DOAE/DFR outcomes and effectiveness on AD of Tralokinumab and JAKi after Dupilumab discontinuation. Methods: This retrospective study included AD patients ≥12 years discontinuing Dupilumab due to DOAE and/or DFR, and switching to Tralokinumab or JAKi (Baricitinib, Upadacitinib, or Abrocitinib). The primary outcome compared the proportion of resolution or improvement of DOAE/DFR between patients under Tralokinumab or JAKi. Secondary outcome compared the percentage of patients achieving IGA (Investigator's Global Assessment) 0/1 between M0 (Dupilumab discontinuation) and M3-6 (3 to 6 months after introduction of the new treatment). Results: We included 106 patients. Compared to Tralokinumab, switching to JAKi leads to a higher proportion of resolution/improvement for DOAE (92.2% vs 72.4%; p=0.0244) and DFR (85.2% vs 33.3%, p=0.0006). Pro-

portion of patients reaching IGA0/1 increased between M0 and M3-6 (21.9% vs 42.2%, p=0.0067) in JAKi group and remained similar in Tralokinumab group (32.3% vs 35.5%). Mostly due to a lack of AD control, 44.4% and 64.7% discontinued Tralokinumab and JAKi during follow-up (mean 7.8 months). Conclusion: Switching to JAKi or Tralokinumab is efficient for managing Dupilumab-induced AEs, with a better response under JAKi in our experience, but both strategies may fail to control AD.

### *P8.30*[#407]

## AMELIORATIVE EFFECTS OF ESCIN ON INFLAMMATION VIA GLUCOCORTICOID RECEPTOR IN ATOPIC DERMATITIS MOUSE MODEL

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Atopic dermatitis (AD) is a chronic, relapsing, and highly itching inflammatory skin disease. Escin, derived from aesculus hippocastanum, exhibits various pharmacological activities, including anti-inflammatory and anti-viral effects, and mimics glucocorticoid-like mechanisms in inflammation regulation. Despite these known properties, its effect on AD remains underexplored. This study aims to investigate the effects of escin on AD and whether its anti-inflammatory effects are mediated through the glucocorticoid receptor (GR). The effectiveness of escin in improving AD was evaluated by visual evaluation, comparison of the lymph node sizes and spleen weights, histological evaluation, RT-qPCR, ELISA, and IHC analysis in the mouse model. Compared to the dermatophagoides farina extracts (DFE)-induced AD control (AD-C) group, immunoglobulin E (IgE) levels, ear and epidermal thickness, and mast cell infiltration were dramatically decreased via escin treatment. Escin also significantly reduced dermatitis score, size of spleen and lymph node. Moreover, compared to the AD-C group, Escin inhibits the reduction of filaggrin and the elevation of thymic stromal lymphopoietin (TSLP), interleukin (IL)-4, IL-13, IL-1β, and tumor necrosis factor (TNF)-α levels. Furthermore, escin significantly decreased NF-κB expression induced by DFE. However, pre-treatment with RU486, a GR antagonist, attenuated all effects of escin. Consistently, escin regulated the IFN-γ/TNF-α-mediated alteration of TSLP and filaggrin expression in HaCaT keratinocyte cells. Moreover, escin inhibited the lipopolysaccharide (LPS)-induced overproduction of nitric oxide (NO), iNOS and COX-2 expression, and IL-16 and IL-1β levels in RAW 264.7 cells. These results suggest that escin has the therapeutic potential in treating AD through the GR.

### *P8.31*[#379]

## LIVING NETWORK META-ANALYSIS OF SYSTEMIC TREATMENTS FOR ATOPIC DERMATITIS

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New systemic agents continue to be approved for atopic dermatitis, but these are mainly assessed in placebo-controlled trials. To enable ongoing comparisons of the efficacy of systemic treatments for atopic dermatitis. We search online reference databases and clinical trial registries every 4 months for randomized controlled trials examining ≥8 weeks of treatment with systemic immunomodulatory medications for moderate-severe atopic dermatitis. We perform screening as well as data abstraction and risk of bias assessment independently in duplicate. We perform random-effects Bayesian network meta-analyses comparing medications' effect on clinical signs (e.g., EASI), symptoms (e.g., POEM and PP-NRS) and quality of life (e.g., DLQI) using mean differences (MD) with 95% credible intervals (CrI) where negative mean differences indicate improvement. We present results focused on the latest approved biologic, lebrikizumab, vs. dupilumab in adults. Up until March 1, 2024, we have included 100 trials in the systematic review. Lebrikizumab was associated with no importance difference in change in EASI (MD -2.0; 95% CrI -4.5 to 0.3), POEM (MD -1.1; 95% CrI -2.5 to 0.2), DLQI (MD -0.2; 95% CrI -2.2 to 1.6) or PP-NRS (MD 0.1; 95% CrI -0.4, 0.6) compared to dupilumab among adults treated for up to 16 weeks. Lebrikizumab is similarly effective to dupilumab for the short-term treatment of adults with atopic dermatitis.

### *P8.32*[#462]

## ABROCITINIB RAPIDLY AND EXTENSIVELY NORMALIZES DYSREGULATED BLOOD TRANSCRIPTOME OF ATOPIC DERMATITIS PATIENTS

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Background: Abrocitinib, a selective Janus kinase 1–inhibitor, has demonstrated excellent efficacy in the treatment of moderate-to-severe atopic dermatitis (AD); however, the concurrent changes in the blood transcriptome after abrocitinib treatment has not been reported. Objective: To explore the changes in the blood transcriptome of AD patients upon abrocitinib treatment and the correlations among blood transcriptome, clinical traits, and clinical efficacy. Methods: Blood cell mRNA sequencing was performed on 31 AD patients at baseline and after 4 and 12 weeks' treatment with 100 mg abrocitinib once daily. Differential gene expression analysis, immune infiltration analysis, and weighted gene co-expression network analysis (WGCNA) were conducted for the blood transcriptome. Correlation analysis was conducted for blood transcriptome data and clinical traits. Results: Deviation of the blood transcriptome of AD patients rapidly normalized after 4 weeks' abrocitinib treatment, including downregulation of Th2-, Th1-, eosinophil- and NK- related signature and upregulation of type 1 Tregs (Tr1) cells, which slightly

rebounded after 12 weeks' treatment. Abrocitinib showed more extensive inhibitory effects than dupilumab on Th1-, eosinophil-, and NK-related transcripts, in addition to Th2-related signature. Higher baseline eosinophil count was correlated with greater extent of normalization of AD transcriptome after abrocitinib treatment, but not with clinical efficacy. WGCNA identified an efficacy-related gene module, and a potential efficacy prediction model was constructed by 5 hub genes (PLN2, RAB44, CAT, CLC, RAB44, SMPD3) in this gene module. Conclusion: Rapid and extensive normalization of the dysregulated blood transcripts in AD underlie the efficacy of abrocitinib.

***P8.33*** *#422*

## DRUG SURVIVAL OF SYSTEMIC TREATMENTS FOR ATOPIC DERMATITIS IN SWEDEN

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Real world data on drug survival (DS) and outcome measurements in AD are important and may translate into improved future treatments. To describe the drug survival of dupilumab (DUP), cyclosporine (CSA), methotrexate (MTX), tralokinumab (TRA) and janus-kinase (JAK) inhibitor treatment (abrocitinib (ABR), baricitinib (BAR) and upadacitinib (UPA)) among AD patients in Sweden. Data from the multicenter prospective SwedAD cohort with patients, children and adults, recruited at Swedish dermatological clinics between January 2017 and May 2024 was analyzed using Kaplan-Meier survival curves. All drugs were compared with the most used conventional systemic treatment at study baseline (MTX) using Cox regression. A total of 1,194 patients with AD (median age, 35 years; 608 (50,9%) were female) were included with a total of 1,486 treatment episodes (DUP, n = 1026, CSA, n = 40, MTX, n = 260, ABR, n = 23, BAR, n = 30, UPA, n= 89, TRA, n = 18). Patients treated with DUP or MTX were less likely to have received prior systemic treatment compared to those receiving CSA, TRA or JAK-inhibitors. In total 405 (37%) treatment episodes were discontinued, with insufficient efficacy being the leading cause at 37% followed by adverse event (29%), other cause (22%), remission (8%), and temporary discontinuation (3%). All drugs were compared with MTX and only DUP showed a significantly lower rate of drug discontinuation. The two-year DS of DUP were 83%, and the corresponding survival rates for the other treatment groups were 20% for CSA, 48% for MTX, 17% for BAR and 47% for UPA. Two-year follow up data were not available for ABR or TRA. Dupilumab therapy demonstrated longer DS compared to other systemic treatment options in AD. The impact of national treatment guidelines and time since drug approval should be considered when interpreting the results.

***P8.34*** *#773*

## EASI 90 RESPONSE SUSTAINED UP TO 38 WEEKS AFTER LEBRIKIZUMAB WITHDRAWAL DESPITE NEGLIGIBLE SERUM CONCENTRATIONS

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In the ADvocate 1&2 trials, among LEB responders at the end of the 16-Week (W) induction period, EASI 75 was maintained in 82% patients(pts) on LEB every 4 weeks (Q4W) and by 66% in the withdrawal arm at W52. To understand the relationship between LEB serum concentration and sustained clinical response after treatment cessation in a subset of lebrikizumab (LEB) responders who discontinue treatment. Pts received LEB 500-mg at W0 and W2, then 250-mg every two weeks (Q2W) from W4 to 14 of the induction period. At W16, LEB responders were re-randomized 2:2:1 to receive LEB 250 mg Q2W, Q4W or placebo Q2W (withdrawal). The analysis included LEB responders who were withdrawn from treatment and maintained EASI 90 for 80% visits during the withdrawal period, achieved W52 EASI 90, and did not use rescue medication with data pooled from ADvocate1&2. From W16-52 EASI was assessed every 4 weeks. LEB serum concentration was measured at Ws 16, 32, and 52. 17/60 (28%) of the LEB responders maintained EASI 90 for 80% visits during the 38W withdrawal period, achieved W52 EASI 90 without rescue medication. Withdrawal-period pharmacokinetic data of 16/17 pts: W16 mean serum LEB concentration was 92.4±29.9 µg/mL which decreased to 7.3±14.0 µg/mL at W32 and 0.15±0.20 µg/mL at W52, representing 92% and >99% reductions, respectively. At W52, 12 pts had serum concentrations below the lower level of quantification (LLOQ: 0.09 µg/mL) for the clinical assay. In the population pharmacokinetic analysis, the mean elimination half-life for LEB was 24.5 days approx. LEB, therefore, had undergone approx. 5 half-lives at W32 and 10.9 half-lives at W52. A subset of pts who were randomly withdrawn from LEB maintained a stable EASI 90 response up to W52 with negligible remaining LEB serum concentrations. This is the first analysis that provided additional insights into LEB therapy-free remission.

***P8.35*** *#775*

## LONG-TERM EFFICACY AND SAFETY OF LEBRIKIZUMAB IS MAINTAINED IN PATIENTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS: RESULTS UP TO 3 YEARS FROM ADJOIN

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Lebrikizumab (LEB), a monoclonal antibody with high-affinity to IL-13, has demonstrated efficacy and safety in atopic dermatitis (AD) phase 3 clinical trials. We report LEB efficacy and safety in long-term extension study ADjoin following up to 152 Weeks (W) of continuous LEB treatment with/without TCS. ADvocate1&2 patients (pts) who achieved per-protocol response (EASI 75 or IGA 0/1 without TCS) following 16W LEB

treatment were re-randomized 2:2:1 to LEB 250mg Q2W, Q4W, or placebo (withdrawal). ADvocate1&2 pts who completed W52 and ADhere pts who completed W16 could enroll into ADjoin; LEB responders were randomized 2:1 to LEB 250mg Q2W or Q4W. Data are reported for W16 LEB responders from ADvocate1&2 (N=181) and ADhere (N=86) who received LEB 250mg Q2W or Q4W in ADjoin. Efficacy outcomes were assessed (as observed analysis) up to ADjoin W100 (total 152W and 116W of LEB treatment from ADvocate1&2 and ADhere, respectively). Safety was reported from ADjoin (data cut-off April 24, 2024). In ADvocate1&2 pts, at W152 IGA 0/1 was maintained by 82.9% (34/41; Q2W) and 84.0% (42/50; Q4W) and EASI 75 by 90.5% (57/63; Q2W) and 94.1% (64/68; Q4W). In ADhere pts, at W116 IGA 0/1 was maintained by 86.7% (26/30; Q2W) and 91.7% (11/12; Q4W) and EASI 75 by 94.9% (37/39; Q2W) and 90.9% (20/22; Q4W). EASI 90 was reported by 79.4% (50/63; Q2W) and 86.8% (59/68; Q4W) of ADvocate1&2 pts at W152 and 84.6% (33/39; Q2W) and 86.4% (19/22; Q4W) of ADhere pts at W116. ADjoin adverse events (AE): 29.2% (78/267) mild, 33.3% (n=89) moderate and 4.1% (n=11) serious; 2.6% (n=7) reported treatment discontinuation due to AEs. There was one natural death in the ADhere Q2W arm. Efficacy outcomes were maintained up to 3 years of continuous LEB treatment, in both LEB 250mg Q2W and Q4W arms. The LEB safety profile in ADjoin was consistent with previous LEB studies on moderate-to-severe AD.

### *P8.36*[#776]

## COMPARATIVE EFFICACY OF LEBRIKIZUMAB, DUPILUMAB, AND TRALOKINUMAB IN MAINTAINING TREATMENT RESPONSE IN ATOPIC DERMATITIS AT VARYING TREATMENT CONTINUANCE RATES

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Despite the effectiveness of biologics for moderate to severe atopic dermatitis (AD), long-term treatment adherence can be challenging in clinical practice. We introduce the "durability index" as a novel estimate of the maintenance of therapeutic effect under varying treatment continuance rates. A population-adjusted indirect comparison of placebo-controlled phase 3 trials of dupilumab 300 mg QW/Q2W, tralokinumab 300 mg Q2W, and lebrikizumab (LEB) 250 mg Q4W was conducted. In these trials, week(W)-16 responders (IGA 0/1 or EASI 75) were re-randomized to continue treatment or switch to treatment withdrawal (placebo) until W52. The durability index was developed to estimate drug performance at varying treatment continuance rates between 100% to 0% on-treatment. For IGA 0/1, LEB patients had statistically significantly better odds of maintaining response at W52 vs dupilumab for all treatment continuance rates, ranging from 1.730 (p=0.044) at 100% to 4.690 (p<0.001) at 0%. LEB vs tralokinumab odds ratios (ORs) ranged from 1.787 at 100% continuance to 1.516 at 0%, with significant results favoring continuance rates between 39.5% and 96.9%. For EASI 75, W52 durability at 100% continuance was non-significantly different for LEB vs dupilumab (OR 0.687, p=0.183); but ORs increased in favor of LEB at lower treatment continuance rates, reaching significance from 64.2% (OR 1.454, p=0.05) to 0% (OR 3.235, p<0.001) continuance. LEB vs tralokinumab ORs ranged from 2.132 at 100% to 3.891 at 0% continuance, with significant results favoring LEB for all treatment continuance rates. Dupilumab vs tralokinumab ORs: tralokinumab was favored for IGA 0/1 at lower continuance rates, while dupilumab for EASI 75 at higher continuance rates. LEB treatment response rates were comparable or better than dupilumab and tralokinumab, regardless of treatment continuance rates.

### *P8.37*[#774]

## LEBRIKIZUMAB VERSUS OTHER SYSTEMIC MONOTHERAPIES FOR MODERATE-TO-SEVERE ATOPIC DERMATITIS: A NETWORK META-ANALYSIS OF SHORT-TERM EFFICACY

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Treatments for moderate-to-severe atopic dermatitis (AD) after inadequate response to topical therapy include biologics and Janus Kinase (JAK) inhibitors. The network meta-analysis (NMA) evaluated the short-term lebrikizumab (LEB) efficacy relative to other monotherapies approved for moderate-to-severe AD in adults and adolescents (≥12 years). 22 randomized, double-blind, placebo-controlled monotherapy trials (N=8531) of LEB 250 mg every 2 weeks (Q2W), dupilumab 300 mg Q2W, tralokinumab 300 mg Q2W, abrocitinib 100 or 200 mg daily, baricitinib 2 or 4 mg daily, and upadacitinib 15 or 30 mg daily were analyzed. Efficacy outcomes: patient proportion achieving Eczema Area and Severity Index (EASI) improvement, Investigator Global Assessment of 0 or 1 (IGA 0/1), and ≥4-point improvement in pruritus/itch numeric rating scale (NRS) score at 12 (abrocitinib) or 16 weeks (other treatments). A Bayesian NMA was used to estimate number needed to treat (NNT), odds ratios (ORs), probabilities, and 95% credible intervals (CrI). Itch improvement: LEB had lower NNT values (2.90, 95% CrI: 2.26–3.80) than baricitinib 2 mg (11.12, 6.11–29.30) or 4 mg (8.10, 4.42–19.64) and tralokinumab (7.03, 4.81–11.17). LEB had comparable NNT values for itch relative to abrocitinib 100 mg (3.50, 2.67–4.91) or 200 mg (2.31, 1.90–2.93), upadacitinib 15 mg (2.57, 2.09–3.29) or 30 mg (2.02, 1.74–2.46), and dupilumab (3.47, 2.78–4.58). NNT values for IGA 0,1 and EASI response were similar, except that upadacitinib 30 mg QD had lower NNT values than biologics at week 16. LEB was statistically superior to baricitinib and tralokinumab, comparable to abrocitinib, dupilumab, and upadacitinib 15 mg across all outcomes, but inferior to upadacitinib 30 mg at week-16. LEB has comparable or better short-term efficacy relative to other biologics and JAK inhibitors, except for upadacitinib 30 mg.

***P8.38*** *#325*

## ORAL CYCLOSPORINE FOR PEDIATRIC ATOPIC DERMATITIS: A REAL-WORLD EXPERIENCE OF EFFICACY AND SAFETY

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Cyclosporine (CsA) has been approved for the treatment of moderate to severe atopic dermatitis (AD) in adults. However, its use in pediatric patients raises concerns due to limited data on efficacy and safety. This study aimed to provide real-world data from a tertiary hospital on CsA dosing, treatment duration, efficacy, and safety in the management of pediatric AD. A total of 240 pediatric patients with AD (<18 years), who were treated with CsA at Pusan National University Hospital and Pusan National University Yangsan Hospital between 2010 and 2022, were included in the study. Eczema Area and Severity Index (EASI) scores were assessed at each visit, and routine laboratory tests including complete blood count, liver and renal function test, and urinalysis were conducted. The mean age at CsA initiation was 13.2±3.4 (range 2-17) years. The initial dose varied from 1.2 to 5.1 mg/kg/day. Actual treatment duration of CsA was 9.3±11.9 (range 0.25-77.1) months. After the final dose, EASI scores decreased from 12.5±8.4 to 8.0±7.8 ($p<0.05$). Adverse events were rare (4 gastrointestinal symptoms, 2 hypertrichosis, 2 folliculitis, 2 acnes, 1 headache). During monitoring with baseline and follow-up laboratory tests, no significant changes were observed. Based on our real-world experience, CsA proves to be a viable and safe treatment option for pediatric AD, demonstrating effectiveness and tolerability without major safety concerns.

***P8.39*** *#466*

## BIOLOGIC VERSUS SMALL MOLECULE THERAPY FOR TREATING PRURITIS IN MODERATE TO SEVERE ATOPIC DERMATITIS: CLINICAL CONSIDERATIONS, EFFICACY, AND SAFETY

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Pruritus is a hallmark symptom of atopic dermatitis and significantly impacts patients' quality of life. Biologic therapies targeting such as Dupilumab, and JAK inhibitors have emerged as promising treatments for moderate to severe AD. Literature review aims to compare the efficacy and safety of dupilumab with JAK inhibitors in alleviating pruritus and improving clinical outcomes in patients with moderate to severe AD. A systematic search was conducted in PubMed for randomized controlled trials (RCTs) evaluating biologic therapies (dupilumab, tralokinumab) and small molecule inhibitors (JAK inhibitors, phosphodiesterase-4 inhibitors) in AD published in the last 5 years. Studies were assessed for methodological quality using Cochrane risk of bias tool, and relevant data were extracted for meta-analysis where applicable. Biologic therapies significantly reduced pruritus severity compared to placebo and small molecule inhibitors. Moreover, biologics demonstrated superior efficacy in achieving EASI 75 response rates compared to small molecules. Small molecule inhibitors were associated with higher rates of adverse events, particularly infections. In conclusion, both biologic therapies and small molecule inhibitors provide effective relief of pruritus and improve clinical outcomes in moderate to severe AD. Biologics offer superior efficacy in achieving skin clearance and reducing pruritus severity, though at a potentially higher cost. Small molecule inhibitors, while effective, may pose a higher risk of adverse events. Individual patient characteristics and treatment goals should guide therapeutic decisions in AD management, considering both efficacy and safety profiles of available treatment options and their clinical considerations taken into account.

***P8.40*** *#385*

## SIXTEEN-WEEK DUPILUMAB THERAPY FAILS TO NORMALIZE SYSTEMIC TYPE 2 INFLAMMATION IN CHILDREN UNDER 6 YEARS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS: A REAL-WORLD COHORT STUDY

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Dupilumab has been approved for treating pediatric AD under 6 years, but its impacts on systemic inflammation in this young population remain unexplored. This prospective study (ChiCTR2200063385) aims to evaluate the effectiveness and safety of dupilumab in AD patients aged <6 years, and its impact on systemic inflammation. Children aged <6 years with moderate-to-severe AD receiving dupilumab were recruited. Serum inflammatory markers were quantified using ELISA and Olink proteomic assay. Peripheral blood skin-homing T-cells secreting INFγ, IL4, IL13, IL17, and IL22 were analyzed by flow cytometry. A total of 105 patients were prospectively enrolled, with 22 patients aged ≥6 months to <2 years and 83 aged ≥2 years to < 6 years. The median EASI scores decreased from 22.8 to 2.8 at week 16, with 71.4% of patients achieving EASI-75 and 42.9% achieving IGA 0/1. The incidence of adverse events (AEs) was 20.0% with no severe AEs reported. Both effectiveness and safety were comparable between the age groups. Serum TARC and MDC levels showed a significant decrease after treatment ($p<0.001$), while other inflammatory markers did not show normalization. Notably, IL4 significantly increased post-treatment ($log2FC=2.25$, $FDR<0.001$). The frequency of CLA+ T-cell subsets producing IL4 ($p<0.001$) and IL13 ($p<0.005$) significantly decreased, along with an increase in CD25+FOXP3+CLA+ Treg-cells ($p<0.01$) following treatment. Conversely, the CLA- T-cells secreting IL4 and IL13 remained unchanged post-treatment. Sixteen weeks of dupilumab therapy showed favorable efficacy and safety in children under 6 years with moderate-to-severe AD. The treatment reduced skin-homing Th2-cell subsets, but failed to normalize systemic Th2 inflammation in the serum, suggesting that a longer treatment duration may be required for optimal results.

***P8.41*** *#415*

## SUCCESSFUL TREATMENT OF PRURIGO NODULARIS IN A PEDIATRIC PATIENT USING ANTI-IL-4 RECEPTOR-A ANTIBODY DUPILUMAB

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Prurigo nodularis is a chronic, inflammatory skin condition characterized by intensely pruritic hyperkeratotic nodules that lead to the induction of an itch-scratch cycle, affecting the quality of life negatively. It predominantly affects adults, particularly middle-aged women. The average age of patients with prurigo nodularis identified in an epidemiological study totaling 7,095 was 50.9 years, while the median age was 54 years. However, it can infrequently occur in children and adolescents especially

those with an atopic diathesis. One study showed that the estimated prevalence of pediatric prurigo nodularis was 21.6 per 100,000. We report a case of a 13-year-old Japanese girl who was treated as atopic dermatitis using various potencies of topical glucocorticosteroids and calcineurin inhibitors with minimal success. Biopsy was taken and confirmed the clinical diagnosis of prurigo nodularis. She was then started on an IL-4R-alpha subunit inhibitor Dupilumab. We report the successful treatment of a pediatric case of prurigo nodularis with complete and sustained response and rapid improvement of the NRS11 itch score from 8 out of 10, to 1 out of 10 within 4 months of treatment. Number of lesions was significantly reduced from 8 to 0. The patient was followed up regularly in the department and the treatment regimen was further spaced out over the past 2 years with no relapse since stopping the treatment. This case further strengthens the efficacy and safety of a systemic targeted therapy with a biologic to treat prurigo nodularis in the pediatric population.

### *P8.42#424*

## EFFECTS OF METHOTREXATE IN THE SYSTEMIC TREATMENT OF MODERATE-TO-SEVERE ATOPIC DERMATITIS IN ADULTS IN MALAGASY PATIENTS: ONE-YEAR PRELIMINARY RESULTS

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Atopic dermatitis (AD) is a chronic recurrent inflammatory dermatitis that is common in children and adults. Local treatments associated with hygienic and dietary measures are recommended as a first-line treatment. The management of severe flare-ups that are refractory to local treatments requires the use of systemic treatments. Methotrexate is one of the most accessible and affordable immunosuppressants in Madagascar. The objective of our study is to evaluate the efficacy of methotrexate This is a 2-year, multicenter, cohort study from June 2023 to June 2025. Any individual over 18 years of age with moderate to severe AD followed up with the dermatology reference services of Antananarivo and Toamasina were included We report the preliminary result of the study over 1 year in 21 enrolled patients. The median age of our patients was 40 years with a sex ratio of 1.33. The majority of our cases were from the region Analamanga in 75% (n=16) and 5 other regions in 25% (n=5). The mean duration of the disease was 131±129 months. The mean SCORAD of patients was 57.7±18.7 at baseline. A dose of methotrexate ranging from 7.5mg to 15mg per week was administered for 6 months with bimonthly control. Five of the included cases completed treatment, 2 cases had to discontinue treatment at 8 weeks due to intolerance and inadequate response to methotrexate, 7 cases were lost to follow-up and 7 cases are currently being processed. A 58% improvement in the mean initial SCORAD and 68% in the initial mean EASI was observed in the 5 patients who received the full treatment. A reduction in pruritus to 27% of the baseline mean NRS with an improvement in mean quality of life at 77% of these patients was also noted The management of moderate to severe AD in adults in Malagasy remains a challenge. Poor patient compliance is marked despite rigorous therapeutic education.

### *P8.43#344*

## COMPARED WITH DUPILUMAB NON-PRESCRIBERS, DUPILUMAB PRESCRIBERS PRACTICE MORE EVIDENCE-BASED GUIDELINE CARE: FEWER PRESCRIBED DAYS OF SYSTEMIC CORTICOSTEROIDS AND MORE DAYS OF TOPICAL CORTICOSTEROID-SPARING AGENTS

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First-line therapies for atopic dermatitis (AD) include emollients, topical corticosteroids, and topical corticosteroid-sparing agents. Evidence-based care guidelines for moderate to severe disease strongly recommend dupilumab, tralokinumab, and Janus kinase inhibitors and conditionally recommend conventional immunosuppressants. Systemic corticosteroids are not recommended for AD, but they are sometimes prescribed. Identify characteristics of dermatologists and their practice locations that are associated with prescribing phenotypes for AD therapies. Days of AD therapies prescribed, dermatologist demographic characteristics, and practice postal code were obtained from United States Medicare Part D data files (2017-2021). K-means cluster analyses were conducted using days prescribed of systemic corticosteroids, topical corticosteroids, topical corticosteroid-sparing agents, conventional immunosuppressants, and dupilumab. Dermatologist and practice location characteristics were compared between clusters. Dermatologists in the dupilumab prescribing cluster ("dupilumab prescribers") were more often female, had fewer years of practice, prescribed fewer days of systemic corticosteroids, and prescribed more days of topical corticosteroid-sparing agents than did conventional immunosuppressant prescribers. We found no differences in the median household income, social deprivation index, or rural-urban status of dermatologist practice postal codes between dupilumab prescribers and non-prescribers. Dupilumab prescribers were more recently trained and were comprised of a higher proportion of women. This group of dermatologists may adhere more closely to evidence-based care guidelines by prescribing fewer days of systemic corticosteroids and more days of topical corticosteroid-sparing agents.

### *P8.44#440*

## NUTRITION IN THE MULTIMODAL MANAGEMENT OF CANINE ATOPIC DERMATITIS IN USA ENVIRONMENT: POTENTIAL FOR REDUCED PRURITUS AND IMPACT ON DOG AND OWNER QUALITY OF LIFE

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Canine atopic dermatitis (cAD) and its treatment burden reduce dog and owner quality of life (QoL). A diet containing a combination of omega-three fatty acids, turmeric, licorice, linoleic acid, vitamin E, lutein and taurine was effective in helping control pruritus and skin lesions in a European randomized controlled trial. A prospective multicenter case series evaluated the effects of feeding dry and/or wet foods both containing the same active cocktail, in USA environmental conditions. Client-owned dogs with cAD confirmed by dermatology veterinarians, a Canine Atopic Dermatitis Extent and Severity Index 4th iteration (CADESI-4) score ≥30 and ≤130, and a Pruritus Visual Analog Scale (PVAS) score ≥4/10 were fed test diet(s) (mixed-feeding

or dry only) exclusively for 12 weeks (wks). Outcomes included CADESI-4 (0–180), PVAS (0=normal dog to 10=extreme itching), and impact of cAD on dog and owner QoL. Twelve dogs were enrolled (median age 4.5 years [1-8]; median body weight 50.1 kg [14.3-90.3]; 9 female/3 male; 9 on mixed-feeding solution, 3 on dry), 10 completed the study. Mean CADESI-4 and PVAS scores decreased from Wk0 (n=12) to Wk12 (n=10) by 56% (from 37.8 [30-48] to 16.5 [1-46]) and by 28% (from 6.1 [4-9] to 4.4 [2-7]) respectively. The percentage of dogs with 'non disturbed sleep' increased from 58% to 80%. The total impact of cAD on QoL improved in 8/10 cases, with impact on owners QoL improving by ≥70% in all dog owners. The diets were accepted well, with most of the owners stating that palatability was better than with previous diet fed. Digestive tolerance of the diet was good. The US data presented here support findings from the European study and suggest that, within multimodal management of cAD, diets containing the specific combination of active compounds can help reduce pruritus, skin lesions, and the global impact of the disease on both dog and owner QoL.

### *P8.45*[#430]

## CLINICAL ADVERSE EVENTS WITH UPADACITINIB IN ADOLESCENT AND ADULT PATIENTS WITH ATOPIC DERMATITIS: INTERIM ANALYSIS OF A REAL-WORLD MULTICENTRE RETROSPECTIVE REVIEW

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While clinical trials have evaluated clinical adverse events (AEs) of upadacitinib (UPA) for atopic dermatitis (AD), real-world evidence is limited. To investigate the long-term incidence of clinical AEs of UPA for AD. We conducted a multicenter retrospective review of three institutions in Canada. Patients were followed up for a total of 104±6 weeks. Patient-reported and physician-assessed clinical AEs were recorded. A total of 182 patients were included. Mean age was 43.4 years (range: 12-79 years) with 94 (51.6%) females. Initial UPA dosing was 30 mg (59.3%, 108/182) and 15 mg (40.7%, 74/182). Over 194.6 patient-years, there were 63 clinical adverse events observed (32.4 events per 100 patient-years). Clinical AEs included: herpes simplex (8.2%, 15/182), acne (7.1%, 13/182), folliculitis (6.6%, 12/182), secondary bacterial skin infection (4.4%, 8/182), myalgia (2.2%, 4/182), gastrointestinal upset (1.6%, 3/182), herpes zoster (1.6%, 3/182), non-melanoma skin cancer (NMSC; 1.1%, 2/182), respiratory tract infection (1.1%, 2/182), conjunctivitis (0.5%, 1/182), headache (0.5%, 1/82), urinary tract infection (0.5%, 1/182) and non-fatal venous thromboembolism (0.5%, 1/182). The AEs with the highest events per 100 patient-years were herpes simplex (7.7), acne (6.7), and folliculitis (6.2). In total, there were 7 (3.8%) safety-related discontinuations, including gastrointestinal upset (n=2), myalgia (n=2), folliculitis (n=1), herpes simplex (n=1), and venous thromboembolism (n=1). No serious infections, tuberculosis, major adverse cardiovascular events, gastrointestinal perforation, or solid organ and/or hematological malignancy were observed. UPA was well-tolerated with a similar proportion of clinical AEs to clinical trials and no new safety signals.

### *P8.46*[#431]

## USE OF SYSTEMIC JANUS KINASE INHIBITORS FOR PEDIATRIC ATOPIC DERMATITIS: A SYSTEMATIC REVIEW OF RANDOMIZED CONTROLLED TRIALS

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While several systemic Janus kinase inhibitors (JAKi) have been approved for use in patients >12 years with atopic dermatitis (AD), use of these therapies in the pediatric population remains novel. To summarize the efficacy and safety of systemic JAKi for AD in the pediatric population. Following PRISMA guidelines, a systematic review of randomized placebo-controlled trials (RCTs) studying systemic JAKi for pediatric AD patients (age <18 years) was conducted. Five RCTs reporting on 918 pediatric AD patients were included. The mean age was 14.0 years (range 2-17 years; 22.7% [208/918] <12 years) with 466 (50.8%) males. Systemic JAKi studied included: upadacitinib (40.1%, 368/918; dose: 15/30 mg), baricitinib (39.3%, 361/918; dose: 1/2/4 mg) and abrocitinib (20.6%, 189/918; dose: 100/200 mg) with a treatment duration between 12-16 weeks. The greatest Eczema Area and Severity Index (EASI) improvement was observed with upadacitinib 30 mg (86.2%, n=186), followed by abrocitinib 200 mg (80.6%, n=94), and upadacitinib 15 mg (79%, n=182). EASI90 achievement was seen most frequently with upadacitinib 30 mg (67.5%, 126/186), abrocitinib 200 mg (49.5%, 47/94), and upadacitinib 15 mg (47.8%, 87/182). The highest >4-point improvement in itch Numeric Rating Scale was achieved by upadacitinib 30 mg (55.1%, 103/186), upadacitinib 15 mg (44.2%, 81/182) and baricitinib 4 mg (35.5%, 43/120). AEs occurred most often with abrocitinib 200 mg (53.2%, 50/94), upadacitinib 30 mg (44.1%, 82/186), and abrocitinib 100 mg (42.1%, 40/95); of these, discontinuations were noted with abrocitinib 200 mg (n=2) and abrocitinib 100 mg (n=1). Systemic JAK inhibitors demonstrate a favorable efficacy and safety profile for pediatric AD. Head-to-head studies are warranted.

### *P8.47*[#297]

## EARLY DUPILUMAB RESPONSE PREDICTS PEDIATRIC ATOPIC DERMATITIS DISEASE RELAPSE

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While dupilumab has shown sustained efficacy in long-term treatment, continuous usage may not be feasible in resource-limited settings. Real-world evidence on disease relapse after dupilumab discontinuation is limited. To investigate the risk of disease relapse after dupilumab discontinuation. This retrospective, real-world study included pediatric AD patients initiating dupilumab at a single center. Patients were classified as EASI75 achievers or non-achievers at 16 weeks. Kaplan-Meier estimates and Cox regression analyses were used to compare the risk of relapse between EASI75 achievers and non-achievers. A total of 86 patients were included, with 64 (74.4%) EASI75 achievers and 22 (25.6%) non-achievers. The 6-month relapse rates were 47.4% for achievers and 64.3% for non-achievers (log-rank p = 0.01). The median time to relapse was 6.0 months for achievers and 3.5 months for non-achievers (p=0.03). After adjusting for covariates, the multivariate Cox regression model yielded a hazard ratio of disease relapse of 0.36 (95% CI, 0.16-0.81; p=0.01) for achievers compared with non-achievers. Sensitivity analyses using the Investigator's Global Assessment (IGA) response classification yielded consistent results. Early dupilumab response, as measured by EASI75 achievement, predicts a lower risk of disease relapse after treatment discontinuation in pediatric AD patients.

## P9. Future treatments of AD

***P9.1*** *#400*

### DISEASE MODIFICATION OF METHOTREXATE IN ATOPIC DERMATITIS WITH DECREASING EOSINOPHILS AND SPECIFIC IMMUNOGLOBULIN E - PILOT STUDY

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The use of dupilumab in patients with atopic dermatitis is known to lower serum immunoglobulin levels, suggesting its potential as a disease-modifying treatment for atopic dermatitis. While biologics are theoretically capable of disease modification, other treatments for atopic dermatitis may also have this potential. This study aimed to investigate whether methotrexate, a traditional treatment for atopic dermatitis, and upadacitinib exhibit similar effects. A retrospective analysis was conducted on patients with moderate to severe atopic dermatitis who were prescribed methotrexate and upadacitinib. Eosinophils, total immunoglobulin E (IgE), serum level of house dust mite (HDM) specific antibodies (Dermatophagoides pteronyssinus and Dermatophagoides farinae, D1 and D2 respectively), and serum Malassezia-specific IgE antibodies (MSIA) were measured before and after methotrexate treatment. In 13 patients with moderate to severe atopic dermatitis treated with methotrexate, significant reductions were observed in eosinophils, total IgE, D1, and MSIA (eosinophils, p=0.003; total IgE, p=0.033; D1, p=0.009; MSIA, p=0.033). Contrastively, in 13 patients with severe atopic dermatitis treated with upadacitinib, an increase in all measured indicators was observed. Even medications that improve clinical symptoms of atopic dermatitis have different mechanisms and ways of modulating underlying disease mechanisms. Based on these findings, treatment should be tailored to the individual patient with biologic markers of atopic dermatitis with the pursuit of disease modification.

***P9.2*** *#368*

### THE FUTURE OF ATOPIC DERMATITIS CARE: DEFINING ENDOPHENOTYPES AND EXPLORING BIOMARKERS FOR PRECISION MEDICINE

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Atopic dermatitis (AD) is the most prevalent chronic inflammatory skin disease. Advances in understanding AD's pathogenesis have led to targeted therapies, yet exploration of AD's diverse endophenotypes for clinical application remains in its early stages. We aimed to synthesize current findings on the endophenotypes of AD, evaluate the state of biomarker research, and discuss blueprint of personalized medicine for AD. Data were sourced from MEDLINE and PubMed, using keywords 'endotypes,' 'endophenotypes,' 'precision medicine,' and 'biomarkers.' Our comprehensive review highlight the urgent need for developing biomarkers that accurately reflect AD endophenotypes. Despite the progress in biologics and small molecule therapies, substantial AD patients remain unresponsive, emphasizing the importance of precision medicine concept for management of AD. In line with this, significant studies have been made in identifying biomarkers linked to the diverse endo-phenotypic profiles of AD. Yet, the disease's complexity demands further exploration of its pathophysiology and the validation of these biomarkers. Additionally, the concept of the AM positions AD as a precursor to other atopic diseases, stressing the necessity for early and precise biomarker-driven interventions to prevent further atopic conditions. Despite advances in understanding various endophenotypes of AD, AD management follow a standardized, «one-size-fits-all» approach. In the context of precision medicine, the identification of biomarkers which reflect the specific endophenotypes are critical. These biomarkers would enable the classification of AD patients into distinct endophenotypes, laying the groundwork for tailored treatments based on a deeper understanding of AD's diverse pathogenesis.

## P10. Initiatives at the international level

***P10.1*** *#559*

### KNOWLEDGE, ATTITUDE AND PRACTICES OF PRIMARY HEALTHCARE PROVIDERS REAGARDING ATOPIC DERMATITIS IN MULTAN, PAKISTAN

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The inflammatory dermatosis known as atopic dermatitis (AD) is a multifactorial, chronic, relapsing and characterised by pruritus. Most of the cases are dealt by the primary health care providers (PHCP). Non-dermatologists face difficulty in treating AD. To assess the Knowledge, attitude and practices (KAP) in the primary healthcare providers in the Multan, Pakistan A cross-sectional study was conducted during 3 months (May to July 2024), included all primary healthcare providers (GPs and Family Physicians) practicing in Multan, Pakistan. The method of data collection was a pre-tested questionnaire. It included socio-demographic questions as well as questions to assess their knowledge, attitude and practices regarding AD. Consent was taken by submission of form. SPSS was used for data analysis. Among 320 primary healthcare providers (PHCPs) invited for the study, 273 (85%) responded. The mean age ± SD of respondents was 37 ± 12.56 years (min: 24; max: 58 years). Almost 68% were males. More than two thirds (67.2%) of PHCPs had insufficient knowledge regarding AD whereas 24.7% of them had good knowledge and only 8.1% had excellent knowledge.Considering attitudes, the majority (80%) thought that AD is equally common among Asian, Black and Caucasian populations. The general level of practice was unsatisfactory i.e. 53%. Mostly (74%) said they face difficulty in managing the AD patient at the Primary

healthcare level. Overall knowledge, attitude and practices of the PHCPs regarding Atopic dermatitis is inadequate, implying that management of AD is non optimal in our primary care setting. More than half of the PHC physicians strongly agreed that they should have a role in the management of AD. The observed barriers for that are lack of guidelines and training in dermatology.

### *P10.2*[#651]
### CLINICAL AND BIOPHYSICAL PARAMETERS OF PATIENTS WITH ATOPIC DERMATITIS IN NIGERIA AND CORRELATION WITH DISEASE SEVERITY

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There is documented increase in Atopic dermatitis (AD) prevalence in Nigeria, possibly due to better awareness and urbanisation. Diagnosis is clinical with Hannifin and Rajka; and the UK Working Party Group criteria. We aimed to document and highlight clinical features of Nigerian AD patients, measure skin pH, hydration and transepidermal water loss, correlating these with disease severity. One hundred and fifty AD patients diagnosed with recognised criteria in two tertiary hospitals in Lagos were enrolled. Clinical data and disease severity (EASI scores) were obtained in 140. Skin pH, hydration levels and TEWL were measured with Courage and Khazaka MPA-6 tool. Data was analysed using SPSS 24. The mean age was 24.5+19.8 years and the female-to-male ratio was 1.7:1. Onset of AD at >6 years was seen in 57.9%. Allergic conjunctivitis was more associated with AD than allergic rhinitis or asthma (61.4: 50: 16.4) Risk factors noted were early infancy breast-milk substitutes (90%) and egg consumption (89.3%). Dennie-Morgan folds, palmar hyperlinearity, and periorbital darkening were the most common clinical features in 86.4%, 83.6% and 43.6% respectively. Using EASI, 49.3%; 30%, and 7.1% had mild; moderate and severe disease respectively. Mean hydration levels on the chin and forearm were 56.7+18.5 and 40.0+ 20.7 respectively, mean skin pH of chin and forearm were 6.5+2.1 and 5.5+ 0.4 respectively and TEWL on the chin and forearm were 32.4 [24.5 – 52.2] and 18.8 [13.7 – 34.8] respectively. AD started in older childhood in Nigerian patients and is most associated with allergic conjunctivitis. Dennie-Morgan folds, periorbital hyperpigmentation, palmar hyperlinearity and xerosis were the most common clinical features and most patients have mild-moderate disease. Elevated skin pH and TEWL were noted on the chin.

### *P10.3*[#395]
### ATOPY SCHOOL: FIRST EXPERIENCE IN FRENCH-SPEAKING SUB-SAHARAN AFRICA, ACQUISITIONS, CHALLENGES AND OUTLOOK

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Atopic dermatitis affects the quality of life of many patients. Thérapeutic education helps to maintain a good quality of life. it is generally practiced in atopy schools. The implement of these structures is still inconpicuous in French-speaking sub-Saharan Africa. In Ivory Coast, there has been an atopy school of witch we report the acquisitions, chal lenges and perspectives. Create an adequate framework with the aim of improving the care of patients with atopic dermatitis in order to live optimally with their disease We conducted an interventional study in the atopy school of the Treichville teaching Hospital. Educational tools and a power point presentation were used After 2 years of therapeutic education sessions, we noted a significant overall progression in the disease knowledge score with an overall median of 33.3% [40.0 (31.7 – 53.3) versus 73.3 (66.7 – 80.0); ($p < 0.001$)]. In terms of acquisition, practical management of atopic dermatitis have been improved. Patients attending school have better accepted the disease .3 dermatologists and 2 nurses have been trained. Treatments have been better applied. However, some challenges: The notion of chronic pathology is difficult to admit in our work context . A budget had to be planned for the transport of patients The iconography on white skin was difficult to understand But the outlook is good : . The interest of some dermatologists and nurses The support of some medical partners , for educational workshops and the creation of iconographies on phototypes V and VI The promotion of the atopy school through articles and . Conclusion The implementation of atopy schools must be one of the axes of atopic dermatitis, especially in sub-Saharan Africa where access to primary health care remains a challenge. Keywords: Atopic dermatitis – Atopy school – Therapeutic education

### *P10.4*[#490]
### MOISTURIZERS FOR ATOPIC DERMATITIS (AD): THE ISAD-WHO APPLICATION TO INCLUDE REGISTERED CREAMS IN THE CORE LIST OF THE ESSENTIAL MEDICINES' LISTS (EML AND EMLC)

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Combined with topical corticosteroids, moisturizers are recommended as a first-line treatment for AD and are suitable for all ages, including infants and children. Urea as a cream or ointment, is included on the WHO EML and EMLc lists since 1995 (10%) and 2011 (5%) but without proper guidelines for prescribing/compounding products for AD. Low-resource countries have difficulties to access affordable and good quality moisturizers for treating their AD patients, among a host of costly imported OTC cosmetic products. An application dedicated to moisturizers for AD which will be submitted for inclusion in the 2025 core lists of the EML/EMLc. Following consultations with several manufacturing companies this proposal is based on two sets of criteria. The conditional criteria include literature evidence, pathophysiology guidance for the choice of ingredients, technical aspects for manufacturing products, and production costs. The operational criteria give preference to established substances and products already registered by regulatory agencies, which show proper evidence for the indication atopic dermatitis in the registration and literature reviews. The final decisions were based on a consensus of the WG and endorsement by supporting organizations**. Moisturizing creams containing glycerol 15-20% are proposed as a therapeutic alternative to 5% urea-based moisturizing creams under a square box listing. Considering production costs, both urea-based and glycerol-based moisturizers could be manufactured at around 2,80 euro per piece for a 400 ml tube. For adults, we estimate industrial costs (70-140 grams of emollient/moisturizer per week) at around 25-50 euro per year: for children (50-100 grams per week)at 18-36 euro per year. Acknowledgement: L Moja B Cappello J Ruiz Postigo, WHO EML and NTD depts, Geneva, Switzerland.

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## P11. Patient-Centered Medicine

### *P11.1#403*

### 2D IMAGING ANALYSES OF XEROSIS & ATOPIC DERMATITIS IN DIVERSE ETHNICALLY PATIENTS FOLLOWING PREBIOTIC SKINCARE REGIMEN

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Variations in epidemiology, clinical presentation, and disease course in Atopic Dermatitis (AD) patients with skin of color (SOC) compared to white counterparts have been reported. There is a lack of representative images of pathologies, including AD, in these patients, resulting in a deficiency of dermatology education, that may challenge diagnosis and undercount disease severity. To evaluate the capability of a new imaging device for effectively monitoring improvement of AD and xerosis in diverse ethnically patients following 10 weeks of prebiotic skincare regimen. A total of 39 subjects from diverse racial/ethnic backgrounds, aged 3-76 yo, phototypes I-VI, with mild-AD and moderate to severe xerosis, were enrolled. All subjects used a prebiotic cleanser for 2 weeks, followed by a prebiotic moisturizer in conjunction for an additional 8 weeks. 2D standardized images of subjects' legs were taken at several time points and analyzed for skin texture parameters, color and irregularity. Both skin texture irregularity and skin color patterns significantly improved overtime with skincare regimen in AD (n=12) and xerosis (n=24) patients. Image analyses showed better improvement overtime in patients with SOC. Skin texture analyses correlated with dermatological clinical assessments, showing significant improvement with prebiotic skincare regimen in all patients by week 10. The standardized images obtained will help raise awareness on the different clinical presentations depending on race/ethnicity, plus support clinicians on disease diagnosis and management strategies, particularly for patients with SOC.

### *P11.2#426*

### THERAPEUTIC EDUCATION IN ATOPIC DERMATITIS: AN OBSERVATIONAL STUDY

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Atopic dermatitis (AD) is a chronic inflammatory disease that requires therapeutic education (TPE).In the dermatology departments; we started a therapeutic education program for AD patients. This study aims to provide a description of our therapeutic education activity. We conducted a prospective multicenter study including all patients with moderate to severe AD (SCORAD 25) in 5 dermatology departements in Algeria. Patients were divided into two groups for the TPE program: children and adults. Demographic information, (scoring AD)SCORAD, pruritus (numerical rating scale)NRS, and patient questions were collected. The educational objectives were defined and evaluated. 60 patients were included across 5 atopy schools and followed for a period of 3 months. The average duration of the workshops was 1 hour and 30 minutes. Each patient benefited from 03 workshops on average during the observation period. The educators involved were the dermatologist, the psychologist and the nurse. 52.38% of patients questioned the role of diet and 50% asked for solutions to itching. The average SCORAD was 34.6 at baseline, at three months it was 21.2. The initial NRS was evaluated at seven, after three months it was at 4. The educational objectives were achieved in 60% of cases TPE is an integral part of the care process during AD and is included in international guidelines. Numerous studies have shown its effectiveness on pruritus, severity of the disease and quality of life. Our results report the interest of atopy schools in the management of AD. Conclusion: The development of educational structures is essential for the treatment of chronic dermatological diseases.

### *P11.3#408*

### IS ATOPIC DERMATITIS STILL A CHALLENGING CONDITION?

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Atopic Dermatitis is one of the common chronic skin diseases. It affects about one-fifth of persons throughout their entire lifetime. The prevalence varies worldwide. However, in our setting, the prevalence of Atopic dermatitis is about 24%. The condition tends to disrupt the mind and impair the quality of life. We present a case of a four-year-old girl who presented at our centre with a complaint of itchy skin rashes for six weeks. The informant was the mother, who reported the rashes started on the neck and flexure aspects of the arms; she went to a nearby pharmacy and bought over-the-counter medication, which she doesn't remember but did not bring any relief to the child. Then she decided to take her to a health centre where she was given topical antifungal medication and an oral antihistamine; mother reports the itchiness reduced a little, but the rashes were exacerbated now, involving almost all the body. She then decided to bring her to our centre. On examination, she had generalised papules, sparing palms and soles with scratch marks, excoriation, lichenification and periorbital darkening. There was a positive atopy history in the family. A diagnosis of Atopic dermatitis was made. Counselling was done about the condition, and the patient was started on clobetasol ointment for two weeks, antihistamine, and frequent moisturising. We saw the patient after two weeks, and the skin had improved drastically. She was then switched to betamethasone valerate 0.025% and to see her after one month. As common as it is, eczema is still difficult to diagnose and treat, especially in the peripheral areas where access to dermatologists is none. Most patients are mismanaged and tend to develop complications. However, the condition has a good prognosis once treated correctly.

## P12. Other

### *P12.1#485*

### IS ECZEMA AREA AND SEVERITY INDEX SCORE ³23 A SUITABLE CUT-OFF FOR SEVERE ATOPIC DERMATITIS?

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Statistical methods were used to propose severity strata on the basis of which the clinical value of a certain EASI and SCORAD score can be interpreted in clinical practice.Previous study have used an anchor-based approach for the comparison of different severity assessments.By comparing different severity measures, they proposed severity-strata via which clinical meanings of severity measures can be interpreted in practice, suggesting "cutoff" for Eczema-Area-and-Severity-Index (EASI): <6 for mild AD, 6~23 for moderate AD, and ³23 for severe AD. The cut-off score for disease severity can also be determined using methods other than the calculation of weighted kappa coefficients. An optimal cut-off value can be obtained using several other criteria such as misclassification-cost, and Youden index. Therefore, this study was conducted to identify the appropriate cut-off values for disease severity in a Korean population. The weighted kappa coefficient and Youden index were calculated to stratify disease severity using the IGA score for the number of possible combinations of the mild-to-moderate and moderate-to-severe EASI and SCORAD cut-off scores, respectively. Here, the Youden index was calculated using the method for the calculation of three-class Youden index reported previously. The results of our study suggest that the criteria for mild-to-moderate and moderate-to-severe disease are cut-off EASI scores of 6 and 15, respectively. The criterion for mild-to-moderate disease is a cut-off SCORAD score of 34, and the criterion for moderate-to-severe disease is a cut-off SCORAD score of 52–58. The methods for obtaining the optimal cut-off value should be discussed in studies in the future. Another concern is that based on the cut-off values, some patients with severe AD may not receive the special attention warranted by them.

## *P12.2*[#387]
## ASSOCIATION BETWEEN ATOPIC DERMATITIS AND LEPROSY

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Leprosy is a chronic infection with mainly cutaneous, mucosal and peripheral nerves manifestations caused by Mycobacterium leprae. Atopic Dermatitis (AD) is a chronic recurrent inflammatory dermatosis associated with atopy. We report a case of an association between AD and leprosy seen at the dermatology department of Befelatanana hospital, Antananarivo, Madagascar. A 21-year-old man consulted for pruritic erythema of the right cheek, extending to the rest of the face, trunk and limbs for 2 years. Recurrent rhinitis without neurological disorders were associated. The patient was asthmatic and had an history of AD since his childhood.He had no family history of atopy, but his father died from leprosy. Examination reveals infiltrated erythematous, with normoesthesia lesions, of the face respecting earlobes, and lichenified lesions on the trunk and limbs with cutaneous xerosis. Neurological examination showed hypotrophy of the thenar and hypothenar loges. A flare-up of AD was evoked. However, regarding the family history,investigations for leprosy were launched.Direct examination of the skin biopsy was negative, but PCR was positive. The diagnosis of borderline tuberculoid leprosy associated with a flare-up of severe AD was made. After 2 months of leprosy treatment, the patient had a type 1 reaction with painful infiltration of the facial lesions, painless bilateral red eye and asthenia. We started on 0.5mg/kg/day of prednisolone with good progression after one month. Furthermore, AD flares were more severe despite dermocorticoids. Systemic treatment by methotrexate was then instituted at 15mg/week.An improvement in SCORAD was noted after 2 months. Leprosy can be associated with atopic disease, but their management are difficult. Some forms of leprosy can mimic eczema. Ichthyosis acquired during leprosy can exacerbate atopic eczema.

## *P12.3*[#765]
## DELINEATING THE ROLE OF IL-33 IN PRURIGO NODULARIS: A PILOT STUDY

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Prurigo nodularis (PN) is a chronic disorder of the skin, characterized by itchy nodules. These nodules/lesions are very pruritic with the condition occurring in various age groups and both genders. PN is associated with significant physical and psychological morbidity and is often refractory to treatments, thus there is an urgent need to delineate the underlying mechanisms/ of PN to create effective treatment modalities. Interleukin 33 (IL-33) is a member of the IL-1 cytokine family, known to act in an inflammatory manner in various allergic disorders. IL-33 is upregulated in keratinocytes, endothelial cells, and sensory nerves of patients with AD. However, its role in PN is unknown. Thus, we sought to investigate the potential role of IL-33 in PN by determining its expression through immunofluorescence and histomorphometry analysis in human punch biopsy samples. Immunofluorescence staining and histomorphometry analysis in human punch biopsy samples. We found a significant increase in expression of nuclear IL-33 in the lesional skin of PN compared to non-lesional and control skin. This increase was observed in epidermal keratinocytes and dermal endothelial cells. In addition, immunofluorescence analysis of CD1a, a marker for dendritic cells, revealed a significant increase in expression in the lesional skin of PN compared to non-lesional and control. Our preliminary findings suggest that IL-33 plays a role in Prurigo Nodularis and warrants further investigation.

## *P12.4*[#447]
## CLINICAL EFFECTIVENESS AND TOLERABILITY OF THE USE OF EMOLLIENT "PLUS" VERSUS UREA 10% MOISTURIZER IN PATIENTS WITH MILD-MODERATE ATOPIC DERMATITIS

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Atopic dermatitis (AD) is a chronic inflammatory skin disease that affects patient's quality of life. Current AD guidelines recommend the daily use of emollients or emollients "plus" along with drug treatments depending on AD severity. Emollient "plus" have shown their benefits in improving AD signs and symptoms, reducing flares and use of topical corticosteroids (TCS). This study was conducted to compare the effectiveness and tolerability of an emollient "plus" containing Vitreoscella filiformis and Microresyl to urea 10% moisturizer in mild-to-moderate AD. 60 adult patients with mild-moderate AD were recruited in this double-blind clinical trial comparing an Emollient "plus" to urea 10%. Both products were used twice a day for 12 weeks. Evaluations included clinical parameters; transepidermal water loss (TEWL), SCORAD, skin pH, pruritus visual analog scale (VAS), and safety. Emollient "plus" group (n=30) showed a superior efficacy versus urea 10% group (n=30) for TEWL and skin pH values at week 4 (TEWL p=0.05; skin pH p=0.03), week 8 (TEWL p=0.01; skin pH p=0.001), and week 12 (TEWL p=0.001; skin pH p=0.001). Emollient "plus" group showed a significant better improvement of SCORAD after week 8 (p=0.01) and week 12 (p= 0.001), as well as pruritus VAS at week 12 (p=0.001). Finally, Emollient "plus" was better tolerated than Urea 10%. Both products improved AD over time, although emollient "plus" showed a superior efficacy in improving clinical signs and symptoms, skin barrier function, and was better tolerated in comparison to urea 10%.

### *P12.5*[#404]
### PATTERNS OF STEROID USE IN KOREA BASED ON THE NHIS-NCS

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Steroids are medications with potent anti-inflammatory and immunomodulatory effects, commonly employed in the treatment of conditions such as atopic dermatitis, contact dermatitis and another dermatosis. While steroid therapy effectively reduces inflammation and minimizes the risk of hospitalization in the short term, it is associated with significant adverse effects when used long-term or at high doses. Despite the critical role of steroids in managing various diseases, there is a notable lack of information regarding the characteristics and patterns of steroid use among patients in Korea. This study aims to gain a deeper understanding of the demographics and usage patterns of steroid therapy within the Korean population. This study utilized data from the Korean National Health Insurance Service-National Sample Cohort (NHIS-NSC), which encompasses longitudinal health insurance and health examination records representing approximately 2% of the Korean population (1 million individuals). We analyzed the number of steroid users, prescription frequency, and the conditions for which steroids were prescribed for adults aged 20 and older from 2002 to 2013. The analysis involved time series and frequency analysis conducted on an annual basis. The number of adult steroid users increased annually from 20.8% in 2002 to 30.3% in 2013, with a higher prevalence among females compared to males. Usage patterns by age showed a higher proportion of steroid users in older age groups, with this trend persisting over the years. Steroid prescriptions were most commonly associated with respiratory diseases, followed by skin diseases and eye diseases. The use of steroids has been increasing annually and approximately 30% of total steroid consumption is allocated to dermatological disorders in korea. This trend underscores the need for monitoring of steroid use.

### *P12.6*[#450]
### IDENTIFYING PATCH TEST ALLERGEN SENSITIZATION IN DIVERSE ATOPIC DERMATITIS PHENOTYPES: A FOCUS ON EXPOSED SITES

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Atopic dermatitis (AD) exhibits a variety of phenotypes. Certain AD phenotypes, particularly those with lesions at exposed sites such as head and neck dermatitis and hand and foot dermatitis (HNHF), are prone to flare-ups and can be challenging to treat. Limited data exist on patch test allergen analysis by AD phenotypes. This study aims to analyze differences in patch test allergens according to the topographical phenotype of AD. We retrospectively reviewed the electronic medical records of patients with AD who visited Chosun University Hospital from January 2020 to July 2023 and underwent patch testing. Subjects were divided into two groups and compared: HNNF AD group (n=37) and non-HNNF AD group (n=22). A total of 59 patients were included in this retrospective study. Of these, 66.1% (39/59) tested positive for at least one patch test allergen. Nickel sulfate and cobalt chloride were the most frequently identified allergens in both groups. While most patch test allergens did not differ significantly between the groups, the HNHF AD group exhibited significantly higher positivity rates for potassium dichromate (p =0.020) and mercury chloride (p =0.039). This study provides valuable insights into specific allergens associated with AD phenotypes. Preventing the development of allergic contact dermatitis through the avoidance of specific metal antigens could potentially improve outcomes for patients with difficult-to-treat AD.

### *P12.7*[#332]
### ATOPIC DERMATITIS IN INDIAN SKIN

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Indian skin is different from Caucasian skin or dark skin.it is in between light and dark skin with different shades of brown. Skin changes in atopic dermatitis are different from other skin types To present different colours of skin in atopic dermatitis in Indian skin. Common presentations are pityriasis alba lichenifified eczema and hypopigmentation following treatment. Diagnosis of atopic dermatitis in Indian skin needs little expertise and experience in treating brown skin. Summarising Indian skin behaves differently in atopic dermatitis which needs experience and expertise in treatment

### *P12.8*[#377]
### CLASSIFICATION OF FACIAL INVOLVEMENT IN ATOPIC DERMATITIS

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The head and neck in the Atopic dermatitis (AD) are the most commonly affected areas, and approximately 50% of adults and 70% of children are known to have lesions in these areas. However, there has been no classification of the distribution of lesions according to subdivided regions in facial AD. We aimed to elucidate the distribution of facial lesions and the involvement patterns in patients with AD. We retrospectively reviewed accessible medical charts and photographs. A total of 69 patients were reviewed. The involved regions were divided into fourteen parts anatomically. Each patient was classified into one of the following

five patterns: 1) periorificial pattern; 2) centrofacial pattern; 3) diffuse pattern; 4) patch pattern, and; 5) mixed pattern. Mixed pattern is defined as presence of two or more distinct patterns, and the subject with this pattern is counted for the mixed pattern as well as each composing pattern. 53.1% of patients were male and the median age was 30.3 years (range: 8–74 years). The most commonly involved sites were the buccal areas (both 67.3%). The most common pattern was centrofacial (28.8%), followed by periorificial (26.3%). The average level of IgE was 3758.7 ± 8079.0 IU/mL, and the average IgE was highest at 6075.9I ± 6166.8U/mL in the diffuse pattern group. Regarding the treatment, cyclosporine was the most commonly used treatment in all groups, followed by dupilumab injection. This study analyzed the predilection sites and the distribution pattern of facial lesions. We consider centrofacial and periorificial patterns are associated with facial dermatosis related to AD. Analyzing aggravating factors or allergy patterns for each facial involvement pattern can be used for personalized medicine in the future.

# PRE MEETING LECTURE ABSTRACTS (PM)

## *PM.1*
## ATOPIC DERMATITIS IN THE MIDDLE EAST

*Martin STEINHOFF*

Abstract summary not available at the time of printing

## *PM.2*
## ATOPIC DERMATITIS IN EGYPT

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Atopic dermatitis (AD) is a complex, chronic, inflammatory disease of the skin that usually arises during infancy. Multiple comorbidities are associated with AD and have a significant impact on the well-being of the patients and their families. AD is not just a disease of childhood — there is disease persistence and chronicity in adults. Although the morphology and distribution of skin lesions are heterogenous and vary by age group, general disease characteristics and debilitating effects are similar in children, adolescents and adults. Diagnosis of AD can be challenging especially in adults and may lead to delayed or missed diagnosis and worsening of AD. The pathophysiology of AD is complex and involves T-cell driven inflammation, epidermal dysfunction, and genetic predisposition, and AD is associated with increased risk of multiple comorbidities, including asthma, allergic rhinitis, and food allergy. Comorbidities also extend well beyond atopic conditions to include other skin diseases, bowel, joint, and cardiovascular abnormalities. There are important differences in the characteristics of AD among different ethnicities from various geographical regions and age groups, which may impact upon how AD is diagnosed.6 It is therefore important that we understand the geographical and age-related variations in the disease burden of AD. In Egypt dermatologists rather than general practitioners most frequently diagnose AD, it was found to be more prevalent in females in the 25-44 age group. The prevalence of AD was higher in urban respondents, in those who were more highly educated, with higher incomes, employed versus unemployed, smokers compared with non-smokers. Despite the similarities in the presentation of the disease globally, there is a lack of consistent management and treatment guidelines for AD in the Middle East. General treatment strategies for AD include hydration with emollients and moisturizers, short-term treatments with topical corticos- teroids (TCSs), and long-term maintenance with topical calcineurin inhibitors (TCIs) or crisaborole]. Crisaborole ointment, 2%, is a nonsteroidal phosphodiesterase 4 (PDE4) inhibitor for the treatment of mild-to-moderate AD [19]. In Egypt, crisaborole has only recently been approved for the treatment of mild-to-moderate AD. Patients whose AD is not controlled with topical therapies may utilize phototherapy or general systemic immunomodulators, such as methotrexate, azathioprine, and cyclosporine, or biologics such as dupilumab. Dupilumab is an interleukin 4 (IL-4) receptor antagonist that is administered subcutaneously for the treatment of moderate-to-severe AD and is approved in Egypt. The oral Janus kinase (JAK) inhibitors baricitinib (approved in Egypt), abrocitinib (approved in Egypt), and upadaitinib (approved in Egypt ) can also be used for the treatment of moderate- to-severe AD. Recently with the introduction of newer therapies namely Dupilumab and JAK inhibitors, awareness among dermatologists of the nature of the disease has improved ,though more education and awareness is needed among physicians and patients. Lack of access to treatment is a problem in Egypt,medications can be prescribed out of pocket or through private insurance. We have started a protocol through the national health insurance to introduce newer therapies in severe to moderate AD not responding to traditional systemics. The multifactorial nature of AD makes the development of a standard management approach a major challenge. Moreover, the Middle East specifically Egypt also faces several challenges in the treatment of AD, including physician nonadherence to AD management guidelines as well as the lack of access to treatments.

## *PM.3*
## ATOPIC DERMATITIS IN ALGERIA

*Aomar AMMAR-KHODJA, Samira ZOBIRI*

Abstract summary not available at the time of printing

## *PM.4*
## ATOPIC DERMATITIS IN CHINA

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Atopic dermatitis (AD) is the most common chronic inflammatory skin disease, characterized by recurrent eczematous rashes and persistent pruritus, significantly affecting patients' quality of life. In China, AD prevalence has surged, with recent data showing a 1-year prevalence of 6.13%, impacting approximately 80 million individuals, of whom 25% have moderate-to-severe forms of the disease. This presentation provides an overview of AD in China, with clinical manifestations that align with global patterns. Infants are often present with facial rashes, while older children and adults frequently experience flexural involvement, lichenification, and localized lesions. Hand eczema is particularly common among Chinese adults exposed to occupational irritants. Chinese dermatologists have made notable strides in AD research, developing diagnostic criteria tailored to Chinese patients, updating national guidelines, and leading clinical trials on targeted therapies. Innovative practices in clinical settings have enabled the efficient management of high patient volumes, with up to 80 patients treated daily in leading dermatology centers. Beyond clinical advances, China has contributed groundbreaking research in areas such as transcriptomics, itch biology, and the gut-skin connection in AD. Despite these achievements, challenges remain, including the need for improved diagnostic tools, expanded clinical trials, and enhanced integration of basic research with clinical practice. Looking ahead, collaboration between domestic and international experts will be critical in advancing precision medicine and improving patient outcomes. China is eager to further engage with the global AD community, fostering international collaboration to drive progress in the field.

## *PM.5*
## ATOPIC DERMATITIS IN GERMANY

*Uwe GIELER*

Abstract summary not available at the time of printing

## *PM.6*
## ATOPIC DERMATITIS PATIENT'S JOURNEY THROUGH THE HEALTHCARE SYSTEM IN BRAZIL

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Atopic Dermatitis (AD) is a chronic inflammatory condition that most commonly starts in early infancy and in some instances can accompany patients throughout their lives. AD patients' journey through the healthcare system is often confusing and involves many medical specialists, healthcare settings and treatments. The aim of this study is to investigate how AD patients move through the healthcare system in Brazil. Data was collected from a nationwide online survey of 529 AD patients and caregivers in Brazil. Among many inquiries, patients and caregivers were asked when AD started, the number of doctors they consulted, hospital admissions due to AD, and the level of overall satisfaction with the treatment. Most patients said that AD started during infancy (52.7%) or childhood (29.3%). Only 7.7% started AD in adolescence and 10.5% in adulthood. Paediatricians were the first contact with the healthcare system (50.8%) followed by dermatologists (27.8%). During the time of the survey, most patients were being treated by dermatologists (61.5%), followed by allergist/immunologists (38.5%) and paediatricians (15.5%). The number of doctors consulted to date was high: 35.8% (3 - 5 doctors), 26.45 (6-10 doctors), and 29.1% said they consulted more than 10 doctors to treat their AD. 24.5% referred to having been admitted to a hospital for treatment at least once. Positive overall satisfaction with AD treatment was 42.5%. The journey of the AD patients through the healthcare system is often long and confusing and reflects the chronicity and high expectations of patients and caregivers of a rapid and long-lasting resolution. Better education of patients, caregivers and doctors, as well as improvements of diagnostics and referrals, are needed to improve the streamline of AD patients through the healthcare system.

## *PM.7*
## ATOPIC DERMATITIS IN MALI

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In Mali, atopic dermatitis, also known as ''Kaba'' (in bamanan, local language), is a little-known condition outside specialized hospital departments. Patients are generally managed by dermatologists, while lung specialists and pediatricians are involved in cases of comorbidity. According to data from the hospital information system in 2023, the Bamako Dermatology Hospital, a referral hospital for skin diseases, reported 2,060 cases of AD out of 54,834 outpatients, representing a frequency of 3.7%. The patients' mean age was 8 years (3 months-57 years) with a sex ratio of 0.59. Ninety-nine per cent of patients lived in the city of Bamako (urban area, capital city). The clinical manifestations were classic and dominated by skin xerosis, lichenification and bacterial superinfections. Asthma was associated with AD in 16% of cases. A severe disease was seen in 40% of patients according to the IGA scale. Approximately one third of patients reported skin discomfort. The first-line drugs that help control most patients were emollients, topical steroids and antihistamines. Patients who failed first line therapy usually received alternatives such as methotrexate, parenteral corticoids and cyclosporine either alone or in combination because calcineurin inhibitors and biotherapies are not available.

## *PM.8*
## MANAGEMENT OF ATOPIC DERMATITIS IN MADAGASCAR: WHERE ARE WE NOW?

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The prevalence of Atopic (AD) dermatitis continues to increase in Madagascar. Among children under 15 years of age, it increased from 1.6% in 1999 to 5.6% in 2016. Adult cases are constantly increasing with a rate of 0.5%. Physicians are faced with a double problem, that of the difficulty of management due to the lack of data on the population with phototype III to VI and that of the lack of financial means for the treatment of this chronic disease. The roadmap on AD in sub-Saharan Africa (SSA) developed in Geneva in 2019 and the meeting of SSA experts on AD in Antananarivo in June 2022 followed by the meeting of the ISAD with WHO and the industries in Gdansk in september 2023 highlights these points. Madagascar does not escape the problem common to the entire SSA (1 dermatologist for 2 million inhabitants). To overcome these problems, we have responded to calls for projects to improve the care of our patients. It started with funding from l'OREAL to carry out a study on filaggrin deficiency (FLG) in Malagasy atopic children, then ISAD to study possible mutations in the SPINK5 and KL7K genes. The samples are from biopsy and whole blood, DNA extraction is carried out at the CICM and analyzed by immunohistochemistry in Zurich. PCR and sequencing analysis for the R501X and 2282deI4 mutations, which are common in Caucasians, were not found in Malagasy people. The result of the comparison of the electrophoretic profiles of the control cases with those of the patients did not show any mutation. Therapeutic responses to the types of mutations found will be investigated at a later date. The study who compared European and SSA patients with AD found that total IgE levels were significantly higher in African patients (from Tanzania and Madagascar) compared to the Swiss population. The analysis of specific IgE revealed major differences in sensitization patterns between African and Euros individuals especially in inhalative allergens (striking for tree and grass pollen). We have recently received pollen counting systems from our Swiss research collaborator in order to have more information about clinically relevant pollen sensitizations. Allergen tests tailored to the African environment are needed. On the other hand, a study on the treatment of moderate and severe AD in Malagasy people with methotrexate received funding from the Cure Within Reach (CWR) in the USA. A comparative study between the management by the dermatologist, the tele dermatologist and the AI on the 5 main pathologies of children (AD, mycosis, scabies, impetigo and insect bite) is underway. A study group on emollient accessibility in SSA of 17 countries is working to include emollients in the WHO list of essential medicines. With these studies approved by the Malagasy Ethics Committee, we work twice as hard as our colleagues in the North before starting our study and demonstrate the difficulty of carrying out such studies in the countries of the South. Although these studies are indispensable for the understanding of AD, we are convinced that therapeutic education remains the key in the management of AD in SSA.

## *PM.9*
## INTRODUCTION TO DIGITAL TOOLS

*Peter LIO*
*Chicago, USA*

Artificial Intelligence and Machine Learning are advancing at an astounding rate. Enormous changes are in store for clinicians, patients, and society as a whole. Already there are several important tools that can be leveraged to improve patient care. While not perfect, it seems increasingly likely that patients and clinicians will turn to these tools over time. This presentation covers several approaches and tools that may be useful for those practicing medicine and educating about disease states and health.

***PM.10***

## THE IMPACT OF CHAT GPT IN AD

*Pranvera SULEJMANI[1], Olivia NEGRIS, Valeria AOKI, Helène AUBERT, Chia-Yu CHU, Mette DELEURAN, May EL HACHEM, Lawrence EICHENFIELD, Ana MOSCA, Raquel Leão ORFALI, Marketa SAINT AROMAN, Jean-Francois STALDER, Alain TAIEB, Antonio TORRELO, David TROYA, Magdalena TRZECIAK, Christian VESTTERGAARD, Andreas WOLLENBERG, Peter LIO[2]*

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Atopic Dermatitis (AD) is the most common chronic inflammatory skin condition globally, presenting a significant burden on patients and healthcare systems. With increasing accessibility to artificial intelligence (AI), patients are turning to large language models for information. Chat-Generative Pre-Trained Transformer (ChatGPT), a conversational AI chatbot, has emerged as a novel tool to help address patient questions. An evaluation of its performance involved submitting 101 commonly asked AD patient questions in eight languages to assess the quality and reliability of its responses. The responses were reviewed by an international group of dermatologists, proficient in the respective languages, and graded using a Likert scale for quality. In the English-language evaluation, ChatGPT-4 provided comprehensive and reliable answers. None of the responses were flagged for harmful information, and most responses acknowledged that ChatGPT is not a physician. However, when expanded to other languages, scores showed variability indicating room for improvement, particularly in providing consistent and evidence-based responses. Despite some limitations, ChatGPT-4 demonstrates considerable potential to assist in patient education. However, future advancements are needed to ensure accuracy and reliability across different languages and medical topics. AI-based systems like ChatGPT are projected to become valuable resources for patients seeking information about AD.

***PM.11***

## AS AN AD PATIENT, WHERE TO FIND RELIABLE ANSWERS TO YOUR NEEDS IN BETWEEN CONSULTATIONS?

*Fanny SENTENAC*

*AD expert Patient, Toulouse, France*

Dermatologists seem to be an endangered species. In France, there is an average of 5.9 dermatologists per 100 000 residents. Consultations tend to be expeditious,16 to 32 min in average. And obtaining an appointment takes around 95 days… Sometimes AD patients are lucky enough to get to join briefly nurses in between consultations. If not, what are the resources AD patients look for? What are their expectations? What are the questions they dare to ask to HCP and what are the ones they keep for themselves, that can lead them to stop or not even try their treatment. Where can they find answers when they don't get the time, opportunity or sufficient level of trust to ask questions to their HCP? Who is going to have enough time to listen and answer them? Who are they going to trust rightly or wrongly? Where are the reliable resources they need, to understand and accept their condition? Where to find the vital emotional support an be empowered to take care of their skin health? Internet? Social Medias? Influencers? Artificial Intelligence? Patients Associations? Expert Patients? Mobile Apps? How to navigate safely? I share with you what I have unfolded of those needs and expectations, exchanging daily with other AD patients through events, and social medias, as an expert patient suffering from a severe AD since my birth. Committed to help and advocate for others since 2018, I will let you know what I am working on creating for AD patients to get the answers they need. I also I have at heart to relay the advices that you are willing to share while not really having the time to do it. Let's unite our voices to have an impact on therapeutic wandering and create bonds between patients and HCP!

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