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April 19–22, 2022

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Abstract book

35th Nordic Congress of Dermatology & Venereology, the NCDV 2022

Organizing committee:
Gregor BE Jemec
Ditte ML Saunte
Christian Vestergaard
Tove Agner
Hans Bredsted Lomholt
Mattias Henning
Tobias Sejersen

Contents

Welcome

Dear Colleagues and Friends,

It is a great pleasure to welcome you to the 35th Nordic Congress of Dermatology & Venereology, the NCDV 2022.

Copenhagen is where it all started more than 100 years ago, so welcome home. The NDA story began here in 1910 when 59 dermatologists met for the first Nordic congress. Much water has flown under the bridges of Copenhagen since then, and the number of participants alone has increased by more than 1000 percent. You may imagine how the didactic content has grown.

We have tried to maximize the didactic impact of the many sessions, by structuring each session more. The reigning triumvirate of chairpersons for each session includes an Interactive chair who is responsible for the speaker-audience interaction, an Operational chair responsible for running the session, and a Narrative chair. The Narrative chair is responsible for tying together the specialist talks much in the same way as a newsreader holds the programme together. This will be done through a narrative that spans the entire session. We have tried to focus on the format while at the same time broadening the content. We hope you will like the result.

Another novelty which we hope you will notice is the presence of medical students. They will be present both as helpers facilitating the practicalities and as regular participants. You will be able to recognize the 'facilitators' by their blue polo-shirts with the inscription 'Future dermatologist' on the back, and all of them by their age. Welcome them into dermatology, they are our future colleagues.

Corona virus has influenced our lives massively over the past couple of years. For most of us this will be the first in-person-meeting since March 2020, and although much can be accomplished in on-line meetings nothing beats in-person meetings for networking. There are plenty of spaces and places for this in the programme – make use of them.

Last but not least, we would like to thank our sponsors and exhibitors for their overwhelming support.

During the next three days, we will celebrate what new things we have discovered together, what we have learned from our discoveries and what we can achieve together for the benefit of our patients.

Enjoy the congress, enjoy Copenhagen!

On behalf of the Local Organising Committee

Conference Chair
Gregor B.E. Jemec

Conference Co-chair
Ditte M.L. Saunte

Chair Scientific Programme
Tove Agner

NCDV 2022 PROGRAMME

WEDNESDAY 20 APRIL

		Abstract no.	Location
08.00	Registration opens		
9.00-12.00	SSDV General Assembly		Pjerrot
10.00-12.00	DDS General Assembly		Blomstersalen
10.00-12.30	NFDV General Assembly		Dansetten
12.15-13.15	Industry symposium A: ABBVIE		Congress Hall
13.15-13.45	Lunch / Posters /Exhibition		
13.45-14.00	Opening Ceremony		Congress Hall
14.00-15.30	**Session 1: Psoriasis – what have we learned?** *Narrative chair: Lars Iversen* *Operational chair: Olav Sundnes* *Interactive chair: Mona Ståhle*		Congress Hall
	Psoriasis in the last millennium, Joar Austad	O1	
	Pathophysiology and genetics, Charlotta Enerbäck	O2	
	Current and novel treatment, Kasper Fjellhaugen Hjuler	O3	
	Comorbidities and epidemiology, Lone Skov	O4	
	Psoriasis 10 years from now, Enikö Sonkoly	O5	
14.00-15.30	**Session 2: Atopic eczema, pruritus & urticaria** *Narrative chair: Laura Huilaja* *Operational chair: Anne Birgitte Simonsen* *Interactive chair: Kilian Eyerich*		Pjerrot
	Itch – pathogenesis and treatment, Jesper Elberling	O6	
	Urticaria – Epidemiology in Scandinavia and new treatments, Simon F Thomsen	O7	
	Atopic Dermatitis Pathogenesis, Kilian Eyerich	O8	
	Atopic Dermatitis Co-morbidities, Laura Huilaja	O9	
	Atopic dermatitis - Topical treatments and skin moisturizers, Emma Johansson	O10	
15.30-17.00	Coffee/Posters/Exhibition		
15.45-16.45	Industry symposium B: UCB		Congress Hall
17.00-18.30	**Special session - HIDDEN:** *HIstory of norDic DErmatology achivemeNts* *Narrative chair: Gregor Jemec* *Interactive chair: Petter Gjersvik*		Congress Hall
	Swedish dermatovenereology in a global perspective, Åsa Ingvar	O11	
	Norway‘s contribution to dermatology and venereology, Petter Gjersvik	O12	
	The contributions of Danish dermatovenereology, Jørgen Serup	O13	
	Finnish dermatovenereology in a global perspective, Nicolas Kluger	O14	
	Iceland’s contribution to dermatology and venereology, Baldur Tumi Baldursson	O15	
	The Baltic countries’ contribution to the world of dermatovenereology, Andris Rubins	O16	
	The core of Nordic Dermatovenereology, Lars Werner	O17	
	Working with dermatology in the Nordic region, Marianne Pilgaard	O18	
18.30-20.00	Welcome Reception		Exhibition area

THURSDAY 21 APRIL

08.00	Registration opens		
08.30-10.00	**Session 3: Hidradenitis Suppurativa** *Narrative chair: Gregor Jemec* *Operational chair: Karin Sartorius* *Interactive chair: Thrasyvoulos Tzellos*		Congress Hall
	The Impact of Hidradenitis Suppurativa, Linnea Thorlacius	O19	
	First contacts – the baseline, Hassan Killasli	O20	
	The bio-eligible patient, Thrasyvoulos Tzellos	O21	
	Fitting in a time for surgery, Øystein Grimstad	O22	
	What to do when you run out of guideline? Christos Zouboulis	O23	

08.30-10.00	**Session 4: Pro and Con** *Part 1: Population Screening & Malignant Melanoma* *Part 2: Emollients* *Narrative chair - Part 1: Katrine Karmisholt* *Narrative chair - Part 2: Laura von Kobyletzki*		Pjerrot
	NO, we should not population screen for malignant melanoma, Andrés Már Erlendsson	O24	
	YES, we should population screen for malignant melanoma, Ingeborg Margrethe Bachmann	O25	
	Emollients con, Tove Agner	O26	
	Emollients pro, Mette Deleuran	O27	
10.00-10.30	Coffee/Posters/Exhibition		
10.30-12.00	**Session 5: Keratinocyte cancers and melanoma** *Narrative chair: John Paoli* *Operational chair: Merete Hædersdal* *Interactive chair: Hans Bredsted Lomholt*		Congress Hall
	Why is there a rise in skin cancer and can we prevent it by screening? Ingrid Roscher	O28	
	New diagnostic tools for melanoma and keratinocyte cancers, Kari Nielsen	O29	
	Surgical treatment for keratinocyte cancers in the skin, Katrine Karmisholt	O30	
	New treatment for melanoma and implications for dermatologists, Marco Donia	O31	
	Future perspectives in the management of melanoma and keratinocyte cancers, Veli-Matti Kähäri	O32	
10.30-12.00	**Session 6: Skin infections, infestations and venereology** *Narrative chair: Ditte Saunte* *Operational chair: Sam Polesie* *Interactive chair: Eija Hiltunen-Back*		Pjerrot
	The creeping sensation of Scabies, Kristine Pallesen	O33	
	The epidemic spreading of M. audouinii infection, Sam Polesie	O34	
	The alarming progression of necrotizing soft-tissue infections, Claus Zachariae	O35	
	The expanding experience of COVID-19 skin manifestations, Nicolas Kluger	O36	
	Venereology: Gonorrhoea, new perspectives on an old infection, Usha Hartgill	O37	
12.00-13.30	Lunch/Posters/Exhibition		
12.15-13.15	Industry symposium C: Lilly		Pjerrot
13.30-15.00	**Session 7: Artificial intelligence (AI), teledermatology & virtual dermatology** *Narrative chair: Thomas Schopf* *Operational chair: Zarqa Ali* *Interactive chair: Johan Dahlén Gyllencreutz*		Congress Hall
	Decentralized clinical trials, studies of the future, Zarqa Ali	O38	
	Automatic image analysis, John Paoli	O39	
	Artificial intelligence in dermatopathology, Noora Neittaanmäki	O40	
	Building apps in health care, Alexander Börve	O41	
13.30-15.00	**Session 8: Work related eczema and skin cancer** *Narrative chair: José Hernan Alfonso* *Operational chair: Tove Agner* *Interactive chair: Cecilia Svedman*		Pjerrot
	History of occupational dermatology in the Nordic countries, Klaus E Andersen	O42	
	COVID 19 SESSION: Covid-19 and work-related skin disease: local experiences		
	- Experiences from Denmark, Yasemin Topal	O43	
	- Experiences from Sweden, Nils Hamnerius	O44	
	- Experiences from Iceland, Gisli Ingvarsson	O45	
	Acrylates – exposure at work and at home, Martin Mowitz	O46	
	Secondary prevention: practical tips for the clinicians, Tanja Carøe	O47	
	Occupation and skin cancer in the Nordic countries, José Hernan Alfonso	O48	
13.30-15.00	**Nurse session 1** *Narrative chair: Bettina Trettin* *Operational chair: Hanne Faarup* *Interactive chair: Kristine Fuskeland*		Blomstersalen
	Measurements of illuminance in simulated daylight photodynamic, Alexandra Sjöholm	O49	
	The impact of attitude: Young people's perspectives on support to their active involvement in the treatment and care of a long-term skin condition, Gitte Rasmussen	O50	
	Design, development and teledermatological solution for patients with psoriasis, Bettina Trettin	O51	
	Focus on quality of life in people living with a hard to heal wound - Translation and psychometric properties of a questionnaire (the Danish Wound-QoL), Jane Thinggaard Knudsen	O52	
15.00-15.30	Coffee/Posters/Exhibition		
15.30-16.30	Guided Poster Walks (PW1-PW16), Chairs: Peter Bjerring & Tove Agner		Congress Hall
15.30-16.30	Industry symposium D: Janssen		Pjerrot
19.00	**Congress Dinner**		Langelinie Pavillonen

FRIDAY 22 APRIL

08.00-09.00	Industry symposium E: Sanofi		Pjerrot
08.00-09.00	NDA Board Report Meeting		Blomstersalen
09.15-10.45	**Session 9: Hot research and networking** *Narrative chair: Liv Eidsmo* *Operational chair: Øystein Grimstad* *Interactive chair: Teea Salmi*		
	Classical pathway of the complement system in cutaneous squamous cell carcinoma, Kristina Viiklepp	O53	
	Peptidylarginine deaminase-1 in epidermal barrier formation in healthy and inflamed skin, Josefin Lysell	O54	
	Vitamin D and psoriasis, Marita Jenssen	O55	
	Characteristics of the gut microbiota in patients with psoriasis, Tanja Todberg	O56	
	PANEL DISCUSSION: John Paoli, Lars Iversen & Gisli Ingvarsson		
09.15-10.45	**Session 10: Microbiome in hand eczema, acne, atopic dermatitis and psoriasis** *Narrative chair: Chris Anderson* *Operational chair: Tove Agner* *Interactive chair: Teresa Berents*		Pjerrot
	Hand eczema as an example of the microbiota in health and disease, Line Brok Nørreslet	O57	
	The microbiota in acne and rosacea and antibiotic stewardship in these conditions, Hans Bredsted Lomholt	O58	
	Interactivity between components of the microbiome in psoriasis and atopic eczema, Nanna Fyhrquist	O59	
	Effect on skin microbiota of UVB and other treatments in atopic dermatitis, Astrid Lossius	O60	
10.45-11.15	Coffee/Posters/Exhibition		
11.15-12.45	**Session 11: Acne - Rosacea** *Narrative chair: Hans Bredsted Lomholt* *Operational chair: Ruta Gancevicienė* *Interactive chair: Alexander Egeberg*		Congress Hall
	Comparative epidemiology of acne and rosacea, Alexander Egeberg	O61	
	Comparative pathogenesis of acne and rosacea, Hans Bredsted Lomholt	O62	
	State of the art traditional treatments for acne and rosacea, Ruta Gancevicienė	O63	
	Physical treatment modalities for acne and rosacea, Merete Hædersdal	O64	
	What is the future? Upcoming and rare treatments for acne and rosacea, Christos Zouboulis	O65	
11.15-12.45	**Nurse session 2** *Narrative chair: Kristine Fuskeland* *Operational chair: Hanne Faarup* *Interactive chair: Bettina Trettin*		Pjerrot
	Supporting the patients beyond skin - At The National Center of Autoimmune diseases, Louise Faurskov Møller	O66	
	How to understand vulnerability among minority groups - Focus on culture, sexual identity, and chronic illness, Dorthe Nielsen	O67	
	Adressing sexuality in dermatologic nursing care, Astrid Blikstad	O68	
12.45-13.45	**Free Communications Session 1** *Chairs: Sigurd Broesby-Olsen & Pernille Lindsø Andersen*		Congress Hall
	LONG-TERM REMISSION OF DARIER'S DISEASE AND HAILEY-HAILEY DISEASE AFTER SUPERFICIAL RADIOTHERAPY, Stine Regin Wiegell	FC1	
	EXTRACORPOREAL PHOTOPHERESIS WITH 5-AMINOLEVULINIC ACID IN PATIENTS WITH GRAFT-VERSUS-HOST DISEASE, Eidi Christensen	FC2	
	ALTERED MATURATION OF THE SKIN BACTERIAL COMMUNITIES OF INFANTS WITH ATOPIC DERMATITIS, Caroline Olesen	FC3	
	DNA-CHIP-BASED MOLECULAR TESTING FOR THE DIAGNOSIS OF TINEA, Ralf Ludwig	FC4	
	A STATUS ON HIGH-RESOLUTION ANOSCOPY - IN DENMARK, Helle Kiellberg Larsen	FC5	
12.45-13.45	Free Communications Session 2 *Chair: Line Kibsgaard & Christian Vestergaard*		Pjerrot
	DISCRIMINATING BASAL CELL CARCINOMA AND BOWEN'S DISEASE WITH NOVEL HYPER-SPECTRAL IMAGING SYSTEM AND CONVOLUTIONAL NEURAL NETWORKS, Mari Salmivuori	FC6	
	POROKERATOSIS IS ONE OF THE MOST COMMON GENODERMATOSIS, Rahime Inci	FC7	
	VALIDATION OF A NEW ITEM FOR DIAGNOSING PRIMARY HYPERHIDROSIS, Mattias Henning	FC8	
	ALLERGIC REACTION IN RED TATTOOS - THE CAUSATIVE MECHANISM?, Katrina Hutton Carlsen	FC9	
	DECISION SUPPORT FOR TREATMENT ELIGIBILITY ASSESSMENT OF HIRSUTE WOMEN, Kenneth Thomsen	FC10	
13.45-14.00	Closing		Congress Hall
14.00-15.00	Farewell sandwiches		

ORAL LECTURE ABSTRACTS

[O1]
PSORIASIS IN THE LAST MILLENNIUM

Joar Austad
Oslo University Hospital, Oslo, Norway

Abstract not available

[O2]
PATHOPHYSIOLOGY AND GENETICS

Charlotta Enerbäck
Linköping University, Sweden

Psoriasis is a chronic inflammatory disease characterized by hyperproliferation and disturbed differentiation of epidermal keratinocytes. Translational immunological studies have successfully delineated the pathophysiology of psoriasis and a central role of IL-23 and helper T-cell type 17 (Th17) has emerged. Moreover, there is a crosstalk between the innate and adaptive immune systems which contribute to the self-sustaining cycle of inflammation. Psoriasis is dependent on gene-environmental interactions and specific triggers, such as stress and infections, are required for the expression of the disease. Genome-wide association studies (GWAS) and more targeted candidate gene approaches have led to the identification of more than 80 psoriasis susceptibility loci. The association with HLA-C*06:02 (psoriasis susceptibility locus 1, PSORS1) is the most prominent and confirm the role of antigen presentation/adaptive immunity in disease pathogenesis. GWAS have been of fundamental importance in supporting the central role of the IL-23/IL-17 pathway in psoriasis, although many of the associated genetic variants are situated in or near genes involved in innate immune pathways. Interestingly, several of the genetic associations overlap with those identified in other autoimmune diseases (such as Crohn's disease, spondylarthritis and celiac disease). These include IL23R, IL12B, IL23A and TRAF3IP2, which are all implicated in Th17 signaling. Thus, both immunological and genetic studies have contributed to the identification of important drug targets for psoriasis. Antibodies directed against IL-23, IL-17, and IL-17RA are approved for clinical use and show excellent efficacy. Furthermore, inhibitors of IL-23 and IL-17 intracellular signaling, such as TYK2 or RORγt, are in clinical development.

[O3]
CURRENT AND NOVEL TREATMENT

Kasper Fjellhaugen Hjuler
Aarhus University Hospital, Aarhus University, Denmark

Abstract not available

[O4]
COMORBIDITIES AND EPIDEMIOLOGY

Lone Skov
Herlev/Gentofte Hospital, University of Copenhagen, Denmark

Psoriasis is an immune-mediated common chronic inflammatory disease with cutaneous and systemic manifestations, affecting 2–4% of the population in Western part of the world but up to 8–11% in Scandinavia. Psoriasis is associated with several comorbidities such as arthritis, cardio-metabolic diseases, and depression. In clinical and epidemiological studies, individuals with psoriasis have increased risk of cardiovascular disease and substantially reduced life expectancy with cardiovascular disease contributing the most. Patients with psoriasis also have a higher frequency of traditional cardiovascular risk factors such as hypertension, dyslipidemia, type-2 diabetes, obesity, and the metabolic syndrome, which could explain the increased risk of cardiovascular comorbidities. However, in several studies psoriasis has been found to be an independent risk factor for cardiovascular disease, perhaps because inflammatory pathways of psoriasis exert systemic effects. The causality between psoriasis and cardiovascular disease is difficult to establish. However, genetic studies have shown a causal relationship between high body mass index and psoriasis, and similar studies on other risk factors and comorbidities are needed to elucidate the association between psoriasis and cardio-metabolic comorbidities. If and how treatment of psoriasis can reduce the risk of cardio-metabolic comorbidities are still unclear, and randomized controlled trials are needed. Nevertheless, systematic screening for and treatment of cardio-metabolic diseases in patients with psoriasis is crucial. Treatment of lifestyle factors have demonstrated positive effect on both comorbidities and psoriasis and should always be recommended.

[O5]
PSORIASIS 10 YEARS FROM NOW

Enikö Sonkoly
Dermatology and Venereology Division, Department of Medicine Solna, Karolinska Institutet, Stockholm, Sweden

In dermatology, psoriasis is at the forefront of the translational revolution, a prime example of how research resulting in growing understanding of the immunopathogenesis of a skin disease has led to numerous targeted therapies, which in turn have taught us about important players in the disease. The rich choice of targeted therapies is unparalleled in dermatology but also poses a challenge for the treating clinician aiming to find the right drug for the right patient. In the future, the therapeutic armamentarium may expand even more, among others, with more choices to patients with mild to moderate disease and for difficult-to-treat patients. A patient-centred care is to be expected in the future with individualized management of each patient, aided by digital tools. Large efforts are made towards identification of biomarkers that may identify patients at risk for severe disease and for the development of comorbidities. With the increasing digitalization and virtual visits, healthcare can become very efficient and cost-effective; at the same time, taking into account the importance of modifiable lifestyle factors, and of psychological well-being, personal visits would need to be kept. Focus is increasingly on prevention and early diagnosis to management of psoriasis patients proactive rather than reactive. Whether there will be a cure remains to be seen but advances in science and healthcare will contribute to a better life for patients with psoriasis.

[O6]
ITCH – PATHOGENESIS AND TREATMENT

Jesper Elberling
Department of Dermatology and Allergy Herlev and Gentofte Hospital and Department of Clinical Medicine, University of Copenhagen, Denmark

This presentation will introduce the basic mechanisms of itch physiology and pathophysiology, from the detection in the skin by primary sensory afferents and their signaling to nerve fibers at the spinal cord, thalamus and the numerous brain areas involved in itch perception. The presentation will examine the following questions with illustrations: why do we cool an itch? Why do we scratch an itch? Why is dry skin itchy? How may inflammation affect itch perception? How may the new Biologics and Janus kinase inhibitors target molecules and receptors involved in itch perception?

[O7]
URTICARIA – EPIDEMIOLOGY IN SCANDINAVIA AND NEW TREATMENTS

Simon F Thomsen
Department of Dermatology, Bispebjerg Hospital and Department of Biomedical Sciences, University of Copenhagen, Copenhagen, Denmark

Chronic urticaria (CU) affects 0.5–1% of the population and is a severely itching skin disease with negative impact on quality of life. Biologics, especially omalizumab, has greatly improved the outlook for patients with CU. However, as new knowledge of CU pathogenesis emerges, other CU specific, investigational drugs, such as the biologics ligelizumab and duplumab, as well as small molecule BTK- and SYK-inhibitors, such as remibrutinib, have emerged as highly anticipated treatments of CU with clinical developmental programs in the final stages. Knowledge urticaria epidemiology and management in Scandinavia is presented and data on efficacy and safety of novel drugs soon to be licensed for CU are presented.

[O8]
ATOPIC DERMATITIS PATHOGENESIS

Kilian Eyerich[1,2]
[1]*Technical University of Munich, Department of Dermatology and Allergy, Germany,* [2]*Karolinska Institute, Stockholm, Sweden*

Abstract not available

[O9]
ATOPIC DERMATITIS CO-MORBIDITIES

Laura Huilaja
University of Oulu, Oulu, Finland

Abstract not available

[O10]
ATOPIC DERMATITIS – TOPICAL TREATMENTS AND SKIN MOISTURIZERS

Emma Johansson
Karolinska Institute, Division of Dermatology and Venereology, Department of Medicine Solna, Stockholm, Sweden

There are several new systemic treatments for patients with moderate-to-severe atopic dermatitis (AD). However, for most patients, both those with mild disease as well as patients with systemic treatment, topical anti-inflammatory treatment and skin moisturizers are essential to receive disease control. Topical anti-inflammatory therapy is important especially in the acute phase of AD, and topical glucocorticosteroids (TCS) are the first-line treatment. Effective treatment depends on sufficient strength, sufficient dosage, and correct application. Topical calcineurin inhibitors (TCI) are also a safe and effective treatment of AD and suitable for lesions in sensitive skin sites such as face and intertriginous areas. Proactive therapy, twice-weekly application with TCS or TCI may reduce relapses of AD. New topical anti-inflammatory therapies are emerging and topical selective phosphodiesterase 4 inhibitors and topical Janus Kinas inhibitors are effective in the treatment of AD lesions and have been approved in some regions. Skin moisturizers improve skin barrier function and AD-associated xerosis, have a glucocorticosteroid sparing effect both in the short term and the long term, and prolong time to relapse of AD lesions. Two small randomised clinical trials showed a reduced relative risk of incident AD among infants with high risk of developing AD. However, this possible primary preventive effect of skin moisturizers has not been confirmed in two larger studies with longer follow-up.

[O11]
SWEDISH DERMATOVENEREOLOGY IN A GLOBAL PERSPECTIVE

Åsa Ingvar
Department of Dermatology Lund, Skåne University Hospital, Department of Clinical Sciences, Lund University, Sweden

The dermatovenereologic patient care of today is based on knowledge that have been accumulated through indefatigable scientific efforts and contributions. This presentation is a reminder of the scientific work performed by Swedish dermatologists that has guided us all to our elevated, enlightened state that allows for state-of-the-art care. The story starts in late 19th century and the treatment of syphilis before the era of penicillin. Later, with the discovery of penicillin, several Swedish dermatologists contributed greatly to unravelling the cause and treatment of Borreliosis. As dermatologists we know that one of the skins most important functions is to constitute a barrier. Many dermatologic diseases cause malfunction of the construction and function of this barrier causing much suffering. But how is this barrier formed and what controls the normal turnover? These are questions that Swedish dermatologists have contributed knowledge to. And what about diseases with malfunctioning epidermis and immune systems, such as atopic dermatitis, psoriasis and ichtyoses? Even in these areas Swedes have added, with the use of science, knowledge that assist in unravelling the cause and finding better treatments. Swedish dermatologists have also investigated and added knowledge to melanogenesis, melanocyte behaviour, high-risk genetic mutations for melanoma predisposition, and the carcinogenicity of PUVA and organ transplantation. Lastly, but not least, with Swedish scientific contributions there is also a better understanding of diagnosing skin tumours with dermoscopy as well as treating them with photodynamic therapy.

[O12]
NORWAY'S CONTRIBUTION TO DERMATOLOGY AND VENEREOLOGY

Petter Gjersvik
Institute of Clinical Medicine, University of Oslo, Oslo, Norway

Norwegian physicians have made significant contributions to the science of skin and venereal disease. In the 19th century, Armauer Hansen (1841–1912) identified the cause of leprosy, and Ceasar Boeck (1845–1917) was among the first to describe sarcoidosis. Later, the natural course of untreated syphilis was reported by Edvin Bruusgaard (1869–1934) and Rasmus Gjestland (1911–93). Niels Danbolt (1900–84) described the effect of zinc in acrodermatitis enteropathica. Georg Rajka (1925–2013) introduced the universally used diagnostic criteria for atopic dermatitis with Jon Hanifin in 1979. Norwegian dermatologists continue to publish noteworthy research papers on a broad range of topics, albeit the number of PubMed publications from Norway is lower than from Sweden, Denmark and Finland. Research in dermato-oncology includes pioneering studies on melanoma biomarkers, artificial tanning and photodynamic therapy. Population-based studies have documented a very high, but declining incidence of skin cancer after organ transplantation. In psycho-dermatology, a large European study on the psychological burden of skin disease was largely led from Norway. Studies in dermato-epidemiology have found a higher psoriasis prevalence in Nord-Trøndelag and Tromsø than elsewhere. In dermato-immunology, research has explored systemic inflammation and fatigue in psoriasis and the role of specific cytokines in atopic dermatitis. A cluster-randomised trial in Norway and Sweden, PreventADALL, found no effect from regular use of oil emollients on the development of atopic dermatitis in infants. To maintain its present academic momentum, Norwegian dermatology should enhance cross-specialty and international cooperation and take more advantage of health registries and its competence in immunology.

[O13]
THE CONTRIBUTIONS OF DANISH DERMATOVENEREOLOGY

Jørgen Serup
Bispebjerg University Hospital, Department of Dermatology, Copenhagen, Denmark

Danish industry fostered together with the Technical University DTU a range of medical ultrasound devices sold worldwide. The 20MHz skin scanner produced by Cortex Technology, Hadsund pioneered by Jørgen Serup is today market leader for cross sectional imaging of the skin. TOOsonix, Hørsholm has developed a 20MHz high-intensity focused ultrasound (HIFU) device that is constructed to deliver high energy to a focal point inside the dermis at a predetermined level relevant for the condition to be treated. The device passed preclinical, animal and early clinical testing. It is CE-marked. The devise can be operated as an ablative method treating outer lesions and as a non-invasive device treating lesions that are hidden in the dermis without disturbing the outer skin thus with no wounding. This is advantageous versus lasers. HIFU causes little pain only. The treatment was hitherto applied to actinic and seborrheic keratosis, basal cell carcinoma, Kaposi sarcoma, haemangioma, warts, xanthogranuloma, Fox-Fordyce disease, tattoo removal and others. Ongoing two-centre studies on skin cancer (with Roskilde Hospital) and neurofibroma Recklinghausen (Sahlgrenska Sjukhuset, SE coordinated with the Wellman Institute and the Bloomberg Foundation, USA) are described. Dermatology departments in the Nordic countries interested in this new method are invited for future projects. The method can overcome some of the disadvantages of therapeutic lasers that work by penetrating thermal damage.

[O14]
FINNISH DERMATOVENEREOLOGY IN A GLOBAL PERSPECTIVE

Nicolas Kluger
University of Helsinki and Helsinki University Central Hospital, Finland

Abstract not available

[O15]
ICELAND'S CONTRIBUTION TO DERMATOLOGY AND VENEREOLOGY

Baldur Tumi Baldursson
Kerecis, Department of Dermatology, Reykjavik, Iceland

Abstract not available

[O16]
THE BALTIC COUNTRIES' CONTRIBUTION TO THE WORLD OF DERMATOVENEREOLOGY

Andris Rubins
Department of Dermatovenerology University of Latvia, Latvia

Baltic Association of Dermatovenerology (BADV) was established in Riga in 1991. The three Presidents (Professor Herman Vahter, Estonia, Dr. Genovena Lapinskaite, Lithuania and Professor Andris Rubins, Latvia) of these Baltic countries dermatovenereology associations established BADV with a goal to exchange experiences, promote science ideas and ensure dermatovenereology development in Baltics, and to support doctors desire to raise their qualification. In these 30 years there have been organized 17 BADV Congresses (In Riga, Tallinn, Vilnius, Tartu, Kaunas). Also we organized many others Congresses and events: International Medicine Meetings (in Riga 2012, 2013), EAAD Congresses (in Riga 2015, 2018 and Taiwan, 2017). These Congresses have been attended by leading European and World Professors, such as Nobel Prize laureate Harald zur Hausen, C. Orfanos, J. Revuz, D. Siegel, K. Fritz, G. Jemec, I. Bartenjev, Th. Krieg, J. Zhang, Chung Hu, K. Kingo, S. Valiukeviciene, R. Schwartz, R. Galimberti, C. Griffiths, O. Larko, R. Hay, L. Kanerva, A.Ranki and many others. Also BADV facilitated our doctors' possibilities to participate in many other international congresses in Europe and all around World. BADV took part in organizing 25th IUSTI-Europe Congresses in Riga, 2011 and organized 21st EADV Congress in September 2012 (which at first was decided in Riga, but was transferred to Prague: President of Congress- Professor Andris Rubins and also scientific programs creator and congress organizer). The biggest event was 3rd BADV Congress in 2000, in Riga, were 34 well know speakers from all World attended. Very successful Congresses were also 13th BADV (in Riga, 2016) ,14th (in Vilnius, 2017), 15th (in Riga, 2018), and despite the Covid-19 pandemic, also 16th (in Riga, 2020) and 17th (in Kaunas, 2021) BADV Congresses which were held in hybrid formats. 18th BADV Congress will be in September 22–24, 2022 in Riga, Latvia (www.badv2022riga.org). In the year of 2022, population in Baltic countries are approx. 6 million people (Estonia -1.3M Latvia-1.9M, Lithuania -2.8M); All Baltic countries are also a part of NATO and European Union. In the Baltics there are 553 dermatovenereologists (EST-95, LAT-179; LTU- 279). As well in the Baltics there are 5 Universities with possibility to study Medicine. It all have resulted in a good way- in the Baltics we are seeing new and powerful dermatovenereologist generation which attend different European and World congresses as participants and speakers and represent our countries in international organizations such as EADV, IUSTI, UEMS, ILDS, EDF.

[O17]
THE CORE OF NORDIC DERMATOVENEREOLOGY

Lars Werner
Psoriasisforeningen, Denmark

The free access of numerous treatments in the Nordic countries is a great benefit for patients. In addition, the treatment options has increased to a substantial level the last 10-15 years for a number of dermatological conditions. Moreover, the clinical development seems to continue to the benefit of the patients. A more individualized approach in choosing the right treatment to the right patient at the right time seems however to have additional potential. Formularies in some Nordic countries do set some restrictions in the free prescribing choice that is not optimal for neither health care providers nor patients. Joining forces should pave the way for such an approach moving forward and should include the inclusion of complementary treatment options e.g. climate therapy which is offered by some dermatologists in the Nordic countries. Life quality is a key parameter for people living with a dermatological condition. Thus, we have seen a more holistic approach in treating dermatological conditions and in some countries patient reported outcomes (PRO) has been implemented securing focus both on the primary diagnosis but also on the comorbidities often associated to a dermatological condition. We have come a long way in the Nordic countries in understanding and treating many dermatological conditions – but many of the diseases within this specialty area are still chronic and not completely cured. That will be the day.

[O18]
WORKING WITH DERMATOLOGY IN THE NORDIC REGION

Marianne Pilgaard
Nation, Copenhagen, Denmark

The Nordic countries has many similarities and a long, common history. Denmark has a strong tradition of clinical research and

clinical trials as well as a rich culture of public-private collaboration. There is, like in the Nordics as a whole, a high level of trust in society. Furthermore, there is strong political support to life science. Together, all these factors create an excellent environment for robust partnerships around clinical trials. Trial Nation is a Danish publicly funded, non-profit, political initiative with the purpose of increasing clinical trials in Denmark. We relay stakeholder perspectives and connect life-science companies with clinical trial specialists. This talk will, taking a starting point in experiences in Trial Nation, focus on the collaboration between industry and dermatology with Denmark as an example in the Nordic region. What are our strengths and which opportunities could be explored?

[O19]
THE IMPACT OF HIDRADENITIS SUPPURATIVA

Linnea Thorlacius
Zealand University Hospital, Denmark

Having a skin disease will always impact the life of the affected patient in some way. A skin disease such as hidradenitis suppurativa (HS) that may be associated with great pain, suppuration, smell, skin damage, fatigue, long diagnostic delay and suboptimal treatment options can impact the affected patients drastically. Accordingly, HS is associated with an increased risk of depression, anxiety, unemployment and completed suicide. The quality of life (QOL) can be greatly affected and affected in ways that may not be shared by other diseases. Generic or skin specific QOL instruments may therefore not always capture these areas of impact accurately. Hence, HS- specific QOL instruments are under development and validation. To address the potential multifaceted impact of HS is essential in daily clinic as well as in clinical trials.

[O20]
FIRST CONTACTS – THE BASELINE

Hassan Killasli
Karolinska Institute, Stockholm, Sweden

Abstract not available

[O21]
THE BIO-ELIGIBLE PATIENT

Tzellos Thrasyvoulos
Department of Dermatology, NLSH Bodø, Norway, Department of Clinical Medicine, UiT, Tromsø, Norway

Hidradenitis suppurativa (HS) is a chronic, inflammatory skin disease which is characterized by many important comorbidities and systemic inflammation. It has an inflammatory skin component with typical inflammatory lesions that, if not treated timely and appropriately, can result to irreversible scaring skin changes. The "window of opportunity" in HS refers to the period during which efforts to control inflammatory activity may be most effective. There is evidence suggesting that immunomodulatory therapy during this window may alter the natural progression of the disease by reducing the accumulation of tissue damage. Up to now, adalimumab is the only approved treatment for hidradenitis suppurativa. All this evidence clearly suggests that it is very important to define who is an HS bio-eligible patient in order to use biologic treatment for HS patients that will benefit from its use in an evidence-based, validated and timely manner. In this presentation we will discuss when and how to use biologics, how to follow-up and assess anti-inflammatory treatment effect and the short-, medium- and long-term evidence for the use of adalimumab up to now.

[O22]
FITTING IN A TIME FOR SURGERY

Øystein Grimstad
University Hospital of North Norway, Norway

Minor surgical treatment like deroofing with cold steel or CO2 laser of chronic lesions can be performed by dermatologists and does not require hospitalization. A surgical approach to localized chronic hidradenitis tunnels using CO2 laser surgery in an outpatient clinic is presented. Moreover, surgery and anti-inflammatory treatment are not opposing interventions. Reducing the inflammatory component of the disease before surgery may facilitate more refined surgery and improve clinical outcomes. Radical surgery and adalimumab can be combined for better efficacy outcomes and with no obvious safety worries.

[O23]
WHAT TO DO WHEN YOU RUN OUT OF GUIDELINE?

Christos Zouboulis
Departments of Dermatology, Venereology, Allergology and Immunology, Dessau Medical Center, Brandenburg Medical School Theodor Fontane and Faculty of Health Sciences Brandenburg, Dessau, Germany; European Hidradenitis Suppurativa Foundation e.V. Dessau, Germany

The registration of the TNFα inhibitor adalimumab in 2015 was a major step forward in the treatment of hidradenitis suppurativa/acne inversa (HS). However, it soon became evident that the effectiveness of adalimumab in daily practice is highly variable. A significant unmet medical need of HS patients remained, and the search for novel therapeutic targets has been intensified. However, targeted HS treatments are still under development and therefore, the existing therapeutic alternatives, when we run out of guideline, are based on traditional and newer antibiotic/biologic treatments: Clindamycin (5-d 3x600 mg/d iv) and doxycycline (2x100 mg/d po) have been shown to exhibit equal effectiveness with the standard oral clindamycin/rifampicin regimen. Combination of adalimumab/tetracyclines and individualized intensification of adalimumab or infliximab treatment offer alternatives following current publications. On the other hand, research data on potential targets detected promising molecules currently under investigation. With phase III trials ongoing, anti-IL-17 biologics (secukinumab, bimekizumab) are in the most advanced stage of clinical development. Targeting IL-1α (bermekimab), C5α/C5αR blockade (avacopan, vilobelimab), inhibition of JAK1 signalling (INCB54707), IL-36 inhibition (imsidolimab, spesolimab) and IL-17R blockage (brodalumab) are in advanced stage of clinical development showing promising results, especially in high dosage, highlighting that careful surveillance of the balance between safety and efficacy. To guide future drug development, more and better-defined translational data on the pathogenesis of this severe and enigmatic inflammatory skin disease, real world data as well as drug repurposing studies are required.

[O24]
NO, WE SHOULD NOT POPULATION SCREEN FOR MALIGNANT MELANOMA

Andres Mar Erlendsson
Karolinska University Hospital Solna, Karolinska Institutet, Stockholm, Sweden

Background: The incidence of cutaneous melanoma is rising. The mortality rate is rising as well, though not to the same extend. Public awareness campaigns and opportunistic screening with the aim of early diagnosis and reduction in melanoma mortality have been implemented to some extent, but the utility of screening campaigns remain debated.

Objectives: The session will focus on the pros and cons of population-based melanoma screening programs.
Methods: Evidence based arguments will be presented.
Results: Pro arguments include that screening may lead to early diagnosis of thinner melanomas, that screening of skin is non-invasive and generally at low cost and that screening may help overcome sociodemographic inequities.
Cons arguments include that the growth patterns of malignant melanoma are not optimal for screening. Furthermore, skin checks do not provide sufficiently high specificity to serve as a reliable screening method, resulting in a high number of unnecessary excisions. Increased incidence and stable mortality suggest that screening may lead to overdiagnosis while having little impact on mortality.
Conclusion: To date, no firm evidence for recommending generalized population screening for cutaneous melanoma, as there is no large scale randomized controlled trial exploring this issue. Efforts should be concentrated on identifying subpopulations at risk where screening efforts may be of value.

[O25]
YES, WE SHOULD POPULATION SCREEN FOR MALIGNANT MELANOMA

Ingeborg Margrethe Bachmann
Department of Dermatology Haukeland University Hospital, Norway

Abstract not available

[O26]
EMOLLIENTS CONS

Tove Agner
Department of Dermatology, Oslo University Hospital, Oslo, Norway

Abstract not available

[O27]
EMOLLIENTS PROS

Mette Deleuran
Department of Dermatology, Aarhus University Hospital, Aarhus, Denmark

Abstract not available

[O28]
WHY IS THERE A RISE IN SKIN CANCER AND CAN WE PREVENT IT BY SCREENING?

Ingrid Roscher
Department of Dermatology, Oslo University Hospital, Oslo, Norway

The incidence of skin cancer has increased steadily since World War II. The main reason is increased exposure to ultraviolet radiation from the sun as a result of more leisure time and more holidays spent in sun-rich countries. This explanation is supported by ample evidence. Clothing styles, social norms, perceptions of beauty, economic trends and artificial sun tanning also play a role. Some of the increased incidence of melanoma, however, may be caused by a diagnostic drift, i.e. a lowering of diagnostic thresholds in histopathological examination of melanocytic lesions. This is in contrast to keratinocyte skin cancers, which are approximately 20 times more common than melanoma. Early diagnosis is crucial for all forms of skin cancer, particularly for melanoma. Population-based screening for melanoma has been advocated to reduce melanoma-related mortality, but there is no scientific evidence to support this. Even targeting a subgroup population of those at high risk of melanoma would require overwhelming health care resources, making a randomized trial unrealistic and not justifiable. To prevent skin cancer, we should increase our efforts in informing the public on sensible sun habits and early signs of skin cancer. Also, we should educate general practitioners in how to diagnose skin cancer. Skin cancer should be treated as early as possible using the most appropriate method to achieve complete removal and to prevent recurrence, unnecessary morbidity and costly re-operations.

[O29]
NEW DIAGNOSTIC TOOLS FOR MELANOMA AND KERATINOCYTE CANCERS

Kari Nielsen
Lund University Hospital, Sweden

Purpose: Guiding the auditorium among new skin cancer diagnostic methods
Methods: Invited speaker to the narrative session: Keratinocyte cancers and melanoma
Results: Results that will be reported stem in part from my own ongoing research on ex-vivo confocal-laser microscopy. Additional diagnostic methods that will be discussed are dermatoscopy, hyperspectral methods, Raman spectroscopy, ToF-SIMS (mass spectrometry), OCT (optical coherence tomography), photo-acoustic methods, tape stripping, electrical bioimpedance measurement, and artificial intelligence as an aid for diagnosis.
Conclusions: The scientific background and not least the evidence behind, or lack thereof, regarding newer diagnostic methods is important to convey. Knowledge of diagnostic methods that involve safer diagnosis and likely diagnosis at an earlier tumor stage has major health economic consequences.

[O30]
SURGICAL TREATMENT FOR KERATINOCYTE CANCERS IN THE SKIN

Katrine Karmisholt
Bispebjerg Hospital, Copenhagen, Denmark

This talk will address the dermatologic surgery procedures. Attend and get to know why the dermatologic procedure of Mohs Micrographic Surgery (MMS) is an optimal way of removing basal cell carcinomas and the current state of MMS in the Nordic Countries. Furthermore, surgical management of squamous cell carcinomas based on the new Swedish guideline will be addressed.

[O31]
NEW TREATMENT FOR MELANOMA AND IMPLICATIONS FOR DERMATOLOGISTS

Marco Donia
National Center for Cancer Immune Therapy (CCIT-DK), Department of Oncology, Herlev Hospital, University of Copenhagen, Denmark

Immunotherapy has revolutionized the treatment of melanoma in the past 10 years. We will discuss the most recent advances in clinical cancer immunotherapy and what side effects should dermatologists be aware of.

[O32]
FUTURE PERSPECTIVES IN THE MANAGEMENT OF MELANOMA AND KERATINOCYTE CANCERS

Veli-Matti Kähäri
Turku University Hospital, Department of Dermatology, Turku, Finland

Abstract not available

[O33]
THE CREEPING SENSATION OF SCABIES

Kristine Pallesen
Århus University Hospital, Denmark

Abstract not available

[O34]
THE EPIDEMIC SPREADING OF M. AUDOUINII INFECTION

Sam Polesie
Institute of clinical Sciences, Sahlgrenska Academy, University of Gothenburg, Department of Dermatology and Venereology, Gothenburg, Sweden

Abstract not available

[O35]
THE ALARMING PROGRESSION OF NECROTIZING SOFT-TISSUE INFECTIONS

Claus Zachariae
Herlev and Gentofte Hospital, University of Copenhagen, Denmark

Abstract not available

[O36]
THE EXPANDING EXPERIENCE OF COVID-19 SKIN MANIFESTATIONS

Nicolas Kluger
University of Helsinki and Helsinki University Central Hospital, Finland

Abstract not available

[O37]
GONORRHOEA, NEW PERSPECTIVES ON AN OLD INFECTION

Usha Hartgill
Oslo University Hospital, Norway

Gonorrhoea is a sexually transmitted bacterial infection. During the last decade, we have seen a significant increase in the incidence of the infection in Europe, with the group men who have sex with men showing the biggest increase in cases. Although culture has traditionally been the gold standard for confirming gonorrhoea infections, nucleic acid amplification tests (NAAT) have improved both the specificity and sensitivity of diagnostic tests, especially from extra genital sites and with the additional benefit of shorter turnaround times. However, validation of NAATs is important and they have the disadvantage of not providing antimicrobial resistance data. The continued evolution of antibiotic resistant strains of the gonococcus is of pressing global concern, with reported cases of ceftriaxone resistant strains and multi drug resistant strains reported internationally. Enhanced surveillance of antimicrobial resistance, treatment failures and antimicrobial use (stewardship) is crucial. There are few novel, safe and cost effective antibiotics on the horizon and enhanced understanding of pharmacokinetics and pharmacodynamics are essential in order to provide ideal dosing regimens. Rapid point of care testing including genetic antimicrobial resistance testing can assist antibiotic stewardship. Extra genital infection can be important sites for the development of antibiotic resistance and should not be overlooked when testing and treating.

[O38]
DECENTRALIZED CLINICAL TRIALS, STUDIES OF THE FUTURE

Zarqa Ali
Bispebjerg Hospital, Copenhagen, Denmark

Abstract not available

[O39]
AUTOMATIC IMAGE ANALYSIS

John Paoli
Department of Dermatology and Venereology, Institute of Clinical Science, Sahlgrenska Academy, University of Gothenburg, Sweden

This lecture will provide an introduction to what we mean by artificial intelligence and machine learning and how these techniques can be used in dermatology. A broad overview of how far the international scientific community has come so far will be presented followed by my own research group's results within the field including how machine learning fares when predicting melanoma thickness. Finally, future perspectives will be discussed focusing on the need for prospective studies and high quality databases before machine learning solutions can be introduced into routine clinical practice.

[O40]
ARTIFICIAL INTELLIGENCE IN DERMATOPATHOLOGY

Noora Neittaanmäki
Department of Clinical Pathology, Sahlgrenska University Hospital, Institute of Biomedi cine at the Sahlgrenska Academy, University of Gothenburg, Sweden

The pathologist's diagnosis on histopathological slides is at the center of diagnosis for decision-making on how to treat patients in daily practice. Taking into consideration the increasing workload for pathology laboratories, especially for dermatopathologists, new solutions are warranted. Most pathology laboratories are undergoing digitalization. Recently, artificial intelligence (AI) solutions have been introduced for digital pathology. These solutions are already in clinical use in many fields including breast cancer and neuroendocrine pathology for evaluation of biomarkers for guidance of the treatments. AI has even shown potential in tumor grading, assessment of lymph node metastases and predicting the mutation profiles. The majority of dermatopathologists agree that AI will improve dermatopathology. Interestingly, AI seems to be capable of making melanoma diagnosis based on hematoxylin-eosin-stained slides without the help of immunohistochemistry and even outperform pathologists. AI may even be able to predict prognostic melanoma-specific survival from primary tumors and perform a prognostic assessment of the tumor infiltrating lymphocytes and genetic profiling. The appearance of automated digital image analysis holds promise to improve both the volume and precision of histomorphological evaluation. Furthermore, a well-developed AI algorithm could possibly overcome interobserver and intraobserver variability among pathologists. The improved diagnostic accuracy would be beneficial for patients. The use of AI solutions could decrease the workload at the pathology laboratories.

[O41]
BUILDING APPS IN HEALTH CARE

Alexander Börve
Department of Orthopaedics, Sahlgrenska University Hospital, Institute of Clinical Sciences at the Sahlgrenska Academy, University of Gothenburg, Sweden

Abstract not available

[O42]
HISTORY OF OCCUPATIONAL DERMATOLOGY IN THE NORDIC COUNTRIES

Klaus E Andersen
Department of Clinical Research, University of Southern Denmark, Denmark

A limited number of dermatologists from all Nordic countries have been instrumental for the development of occupational dermatology to a high international level through the last 70 years. The major reason for this has been the development and research in contact dermatitis in combination with the implementation of personal numbers and public registries allowing for prospective clinical studies and tracing of patients over many years. The development of occupational dermatology has benefitted from access to animal experiments and chemical analyses. Among the key players have been Poul Bonnevie, Sigfrid Fregert, Bertil Magnusson, Niels Hjorth, Gunnar Høvding, Jan Erik Wahlberg, Alf Björnberg, Veikko Pirilä, Torkel Fisher, Howard Maibach, Lasse Kanerva, and the NIVA courses.

[O43]
COVID-19 AND WORK-RELATED SKIN DISEASE: EXPERIENCES FROM DENMARK

Yasemin Topal Yüksel[1], Line Brok Nørreslet[1], Esben Meulengracht Flachs[2], Niels Erik Ebbehøj[2], Tove Agner[1]
[1]Department of Dermatology, and [2]Department of Occupational and Environmental Medicine, Bispebjerg Hospital, University of Copenhagen, Copenhagen, Denmark

Purpose: The focus on hand hygiene during the pandemic has been reported to increase the hand eczema (HE) prevalence in healthcare workers (HCWs), however, detailed prospective data is missing. Therefore, we aimed to evaluate changes in HE prevalence, exposures, and health-related quality of life (HR-QoL) among HCWs during the pandemic.
Methods: In this prospective cohort study, HCWs employed at four general hospitals in Greater Copenhagen area responded to a digital questionnaire at the beginning of the pandemic and again 11 months later.
Results: Seven-hundred-and-ninety-five HCWs responded to both questionnaires (83.4% were females). The calculated one-year HE prevalence decreased from 16.0% at baseline to 13.0% at follow-up. Number of hand washings decreased significantly, while use of alcohol-based hand rub (ABHR) on wet skin increased significantly. In a logistic regression model, increased use of ABHR on wet skin was associated with HE at follow-up (OR 1.78, 95%CI [1.11–2.87]). HR-QoL worsened slightly at follow-up, with HE severity and frequent flares being risk factors for a reduced HR-QoL.
Conclusions: In contrast to previous studies undertaken during the pandemic, we found a relatively low and stable HE prevalence in HCWs. Our findings suggest that the interaction between changed exposures and HE is complex and cannot be linked to a single factor.

[O44]
COVID-19 AND WORK-RELATED SKIN DISEASE: EXPERIENCES FROM SWEDEN

Nils Hamnerius
Department of Occupational and Environmental Dermatology, Skåne University Hospital, Malmö, Sweden

Exposure to soap and water and gloves are well known risk factors for occupational skin disease in healthcare work. During the COVID-19 pandemic the increased attention to hygiene procedures and use of personal protective equipment has led to not only more reports on hand eczema but also work-related facial skin disease. Among hospital employees in the county of Skåne (southern Sweden) self-reported hand eczema is more frequently reported (1-year prevalence 29%) compared with investigations preformed before the COVID-19 pandemic, and self-reported work-related facial skin disease has become common (1-year prevalence 23%). The number of healthcare workers referred to our department because of work-related skin disease has increased, especially with regard to facial skin disease. Results of clinical investigations including contact allergy testing will be summarized.

[O45]
COVID-19 AND WORK-RELATED SKIN DISEASE: EXPERIENCES FROM ICELAND

Gisli Ingvarsson
University Hospital of North Norway, Tromsø, Norway

The most-reported occupational problems in institutions and private practicing dermatologists in Iceland were not „irritative hand dermatitis“ but rather facial dermatitis related to facemasks. This presentation will also comment upon possible skin-related side effects of the mRNA Vaccines.

[O46]
ACRYLATES – EXPOSURE AT WORK AND AT HOME

Martin Mowitz
Skåne Unversity Hospital, Department of Occupational and Environmental Dermatology, Malmö, Sweden

Acrylates and methacrylates are used in a wide range of product categories and new applications are continuously being introduced. The aim of this presentation is to provide an update of important occupational and non-occupational exposures to (meth)acrylates. Examples of (meth)acrylate-containing products include printing inks, coatings, paints, varnishes, glues, adhesives, dental products, artificial nail products, and medical devices. As for other plastics, sensitization most often occur after skin contact with uncured monomers. The monomeric (meth)acrylates are usually cured by addition of free-radical initiators, such as peroxides, or by radiation-initiated polymerization processes. However, residual monomers may still be present in the cured materials and cause sensitization. This can be exemplified by the many cases of allergic contact dermatitis caused by isobornyl acrylate in medical devices for diabetes patients recently reported in the literature. Airborne contact dermatitis may occur after exposure to volatile (meth)acrylates and also after exposure to dust produced e.g. when grinding plastic materials containing residual monomers. When investigating suspected contact allergic reactions to (meth) acrylates the exposure assessment may be hampered by the lack of detailed ingredient information available for certain products, especially medical devices. There are also examples of industrial products where no methacrylates are mentioned in the safety data sheets although the products contain sensitizing monomers. Unless further information is available from the manufacturers, chemical investigations are often necessary to get information on the composition of the products in these cases.

[O47]
SECONDARY PREVENTION: PRACTICAL TIPS FOR THE CLINICIANS

Tanja Carøe
Bispebjerg Hospital, Copenhagen, Denmark

Purpose: To provide clinicians practical tips and advice on secondary prevention of occupational hand eczema.
Methods: the presentation will walk the audience through literature review, epidemiological studies and clinical experiences on prevention of occupational hand eczema.
Results: Occupational skin diseases are the most frequent recognized occupational disease in Denmark. Hand eczema representing a large portion of this. Hand eczema is associated

with great socio-economic consequences for the individual and the society. Finding and eliminating the exposure that has led to the emergence of the eczema is an important step in the recovery process as well as guidance in how to avoid reemergence of the eczema. However, it is important to bear in mind that advice of change of workplace/career can have negative consequences for the individual and is sometimes not an option. The individual's health literacy should also be taken into account and advice should be based on an individual assessment.
Conclusions: Hand eczema still has large consequences for the individual and the society even though secondary prevention of occupational hand eczema through elimination of the course is often possible. A more individual approach is proposed, where workplace exposure is evaluated, problem areas are addressed and where the individual's health literacy are taken into account.

[O48]
OCCUPATION AND SKIN CANCER IN THE NORDIC COUNTRIES

José Hernan Alfonso
Oslo University Hospital, Oslo, Norway

Population-based studies on the occupational variation in the relative risk for cutaneous squamous cell carcinoma (cSCC) and cutaneous melanoma (CM) in the Nordic countries are among the largest prospective studies, with a follow-up to 45 years. For cSCC, excess risk were observed among seamen, military personnel, public safety workers, technical workers, teachers, transport workers, physicians, dentists, nurses, other health workers, religious workers, clerical workers, administrators, and sale agents. For CM, technical, transport, military and public safety workers with potential skin exposure to carcinogens had excess risks. Men and women with outdoor work had significant low relative risk and, men with indoor work showed excess risk. High socioeconomic status was associated with an excess risk in both sexes. Occupations showing an excess risk of cSCC and CM should be targeted in prevention strategies.

[O49]
MEASUREMENTS OF ILLUMINANCE IN SIMULATED DAYLIGHT PHOTODYNAMIC

Alexandra Sjöholm
Sahlgrenska University Hospital, Sweden

Background: Simulated daylight photodynamic therapy (SDL-PDT) is a new treatment method for actinic keratoses.
Aim: To measure the illuminance that reaches patient target skin areas during SDL-PDT.
Methods: Illuminance levels from the IndoorLux® SDL-PDT system were measured using two different photometers at different distances, angles and directions from the light sources corresponding to common target skin areas. Data from 63 meassuring points at seven separate distances from the ceiling were obtained at 0°, 45° and 90° angles. Illuminance levels were considered to be acceptable if ³12,000 lux. Hotspots were defined as measuring points at 1.3 m, 1.5 m and 1.8 m from the light sources (the most common target skin area positions) in which all measurements at all angles had acceptable illuminance levels.
Results: Photometer 1 recorded a higher proportion of acceptable illuminance levels (73%) compared to photometer 2 (57%). At a 0° angle, both photometers proved that almost all illuminance levels were acceptable. At a 45° angle, 82–93% of the measuring points were acceptable compared to 22–47% at a 90° angle. Hotspots were shown with both photometers in 100% of the measuring points at 0°, in 59–79% at 45°, and in 0–21% at 90°.
Conclusion: To achieve acceptable levels of illuminance during SDL-PDT, patients should be positioned with the target skin area at a 0°–45° angle relative to the treatment lights.

[O50]
THE IMPACT OF ATTITUDE: YOUNG PEOPLE'S PERSPECTIVES ON SUPPORT TO THEIR ACTIVE INVOLVEMENT IN THE TREATMENT AND CARE OF A LONG-TERM SKIN CONDITION

Gitte Rasmussen
Aarhus University Hospital, Denmark

Background: Long-term skin conditions are common in the adolescent population and challenge young people (15–24 years) in their transition into successful self-management. National guidelines recommend their involvement and shared decision-making. However, there is limited data on patient involvement for young people.
Aim: The aim of this study was to investigate how young people experience the degree of involvement in their own treatment and care. This included key issues about which approaches might support their involvement.
Methods: Eighty-nine young people, who received inpatient or outpatient dermatology care, participated in a survey based on five validated (adult) indicators of patient involvement. The participants could fill in a free text field in case they had anything additional to tell.
Results: More than half of the participants experienced a high degree of involvement. The degree of involvement was dependent on a positive attitude of the providers: that the young people were met kindly, felt listened to and taking seriously, were helped with discussing what felt difficult to talk about, included in decision making, and explained about treatment options.
Conclusion: The survey highlights the needs of a trustful relationship between the young people and healthcare providers, as well as establishing communication platforms which support the young people in navigating in the health care systems, involve their family and maintain their hope for the future.

[O51]
DESIGN, DEVELOPMENT AND TELEDERMATOLOGICAL SOLUTION FOR PATIENTS WITH PSORIASIS

Bettina Trettin[1,3], Flemming Andersen[3,4], Hanne Agerskov[2,3]
[1]Department of Dermatology and Allergy Centre, [2]Department of Nephrology, Odense University Hospital, [3]Department of Clinical Research, University of Southern Denmark, [4]Department of Dermatology, Aalborg University Hospital, Denmark

Background: The use of teledermatology has increased rapidly especially during the COVID-19 pandemic and the use of mobile health applications (mHealth app) may provide patients and health care professionals to maintain a relationship and facilitate person-centered care. However, involving patients and health care professions in the design and development of future suitable mHealth solutions is a sparsely investigated field.
Purpose: For patients with psoriasis and health care professionals to co-design and develop a person-centered mHealth solution based on their needs.
Methods: A Participatory design study was conducted in three phases: 1) identification of needs, 2) design and development, and 3) test and evaluation of the solution. Qualitative methods such as participant observation and interviews were used in combination with various user activities.
Results: Both patients and health care professionals requested a new approach as the existing consultations were characterized by a biomedical approach and set of routines and did not necessarily include the patients' needs and perspectives. An mHealth app, adaptable to clinical practice, was designed to support patients at in-person visits, and to accommodate patients' request for fewer visits.

Conclusion: Patients experienced the use of video consultations as a clear advantage and that the mHealth app gave them a voice with regard to what to address during consultations. Health care professionals experienced that they were more attentive during consultations; however, they felt some loss of control when they were not able to assess the patient's skin. Conversely, patients felt both secure and confident in self-assessing their skin.

[O52]
FOCUS ON QUALITY OF LIFE IN PEOPLE LIVING WITH A HARD TO HEAL WOUND - TRANSLATION AND PSYCHOMETRIC PROPERTIES OF A QUESTIONNAIRE (THE DANISH WOUND-QOL)

Jane Thinggaard Knudsen
Odense University Hospital, Denmark

Purpose: Presenting qualitative research findings from the translation and psychometric testing of the Danish Wound-QoL questionnaire.
Methods: Data consisted of focus group interviews (n=3) with three doctors, 14 nurses and four patients. In addition, individual interviews with 18 patients living with hard to heal (HTH) wounds were conducted. All data were recorded, partly transcribed and analyzed using a hermeneutic framework.
Results: All patients spoke about their experience of living with a wound and how it affected their lives and the following themes were identified "burdens in life living with a hard to heal wound", "continuity of treatment" and "cooperation and involvement". The theme "understanding the Wound-QoL." was predefined.
Conclusions: There was consensus that all items were well understood and in general easy to complete and that Wound-QoL was considered a highly relevant tool to improve patient-centered care. However, the findings revealed that not all issues affecting patients' health related quality of life were covered using the Wound-QoL questionnaire. For patients it was important also to consider and ensure corporation between health care professionals, health sectors and their own involvement in the care and treatment of their wounds.

[O53]
CLASSICAL PATHWAY OF THE COMPLEMENT SYSTEM IN CUTANEOUS SQUAMOUS CELL CARCINOMA

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Cutaneous squamous cell carcinoma (cSCC) is the most common metastatic skin cancer and its incidence is increasing worldwide. Previous studies have demonstrated the role of complement system in cSCC progression. In this study we have investigated in detail the mechanistic role of serine proteases C1r and C1s, components of the C1 complex of the classical pathway of complement system. The results show marked upregulation of the expression of C1r and C1s by cSCC cells in culture and by cSCC tumour cells in vivo. Furthermore, our results show that knockdown of C1r and C1s inhibits activation of the extracellular signal-related kinase (ERK)1/2 and phosphoinositide 3-kinase (PI3K) signalling pathways, promotes apoptosis of cSCC cells and suppresses vascularization and growth of cSCC xenografts in vivo. These results provide novel evidence for the role of C1r and C1s in the progression of cSCC and identify them as biomarkers and potential therapeutic targets in cSCC. We continued to study the mechanistic role of serine protease C1r in more detail. Knockout of C1r in cSCC cells using CRISPR/Cas9 resulted in a significant decrease in their proliferation, migration, and invasion through collagen type I compared with that of wild-type cSCC cells. Knockout of C1r suppressed the growth and vascularization of cSCC xenograft tumors and promoted apoptosis of tumor cells in vivo. mRNA-sequencing analysis after C1r knockdown revealed significantly regulated Gene Ontology terms cell-matrix adhesion, extracellular matrix component, basement membrane, and metalloendopeptidase activity and Kyoto Encyclopedia of Genes and Genomes pathway extracellular matrix–receptor interaction. Among the significantly regulated genes were invasion-associated matrix metalloproteinases (MMPs) MMP1, MMP13, MMP10, and MMP12. Knockout of C1r resulted in decreased production of MMP-1, MMP-13, MMP-10, and MMP-12 by cSCC cells in culture. Knockout of C1r inhibited the expression of MMP13 by tumor cells, suppressed invasion, and reduced the amount of degraded collagen in vivo in xenografts. These results provide evidence for the role of C1r in promoting the invasion of cSCC cells by increasing MMP production

[O54]
PEPTIDYLARGININE DEAMINASE-1 IN EPIDERMAL BARRIER FORMATION IN HEALTHY AND INFLAMED SKIN

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Epidermal barrier formation is a meticulously orchestrated process involving several enzymatic processes. One among them is citrullination or deimination of epidermal proteins catalyzed by peptidyl-arginine deiminases (PADs). In human epidermis, the known substrates of PADs include FLG, keratin (K) 1/10, and hornerin. Deimination of FLG is critical to maintain epidermal barrier function, whereas deimination of keratin has been speculated to influence the intracorneocyte fibrous matrix. We observed decreased PAD1 levels in both psoriasis and atopic dermatitis (AD). The inflammatory milieu, including local expression of cytokines, plays an important role in barrier function of the skin, especially in skin barrier defects. Thus, we next explored cytokine regulation of PAD1 expression in epidermis. Our data revealed IL-22 and to some extent Th2 cytokines to decrease PAD1 expression. Increased presence of IL-22+ cells in the skin is a characteristic finding in skin barrier defects, such as psoriasis and AD. However, mechanistic insight into effects of IL-22 on epidermal functioning is yet to be fully elucidated. IL-22 signaling through the IL-22 receptor complex was found to suppress expression of PAD1 in epidermal keratinocytes. Subsequently, total PAD activity and extent of protein deimination in keratinocytes treated with IL-22 were reduced together with a significant decrease in deimination of K1 and FLG. Vitamin D and acitretin partly restored the PAD1 levels decreased due to IL-22. Collectively, we show that pro-inflammatory cytokines inhibit epidermal PAD1 expression, subsequently reducing citrullination of KRT1 and FLG, contributing to remodeling of the inflamed epidermis.

[O55]
VITAMIN D AND PSORIASIS

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Abstract not available

[O56]
CHARACTERISTICS OF THE GUT MICROBIOTA IN PATIENTS WITH PSORIASIS

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Emerging evidence indicates that patients with psoriasis may exhibit an altered gut microbiota, however existing literature have presented heterogenous results. The study aim was to examine the gut microbiota in a selected group of patients with psoriasis. In addition, the effect of adalimumab on the microbiota was investigated. A feacal sample was collected from 53 patients with psoriasis; 52 healthy controls; and 21 cohabitant partners. Using a longitudinal design, 4–6 faecal samples were collected over 9–12 months in a subpopulation of 18 patients with psoriasis and 19 healthy controls. Moreover, a sample was collected from 10 patients with psoriasis prior to adalimumab initiation and another sample was collected after a successful clinical treatment response. Samples were analysed using shotgun metagenomic sequencing analysis. Patients with psoriasis presented a significantly lower richness (p=0.007) and a difference in community composition (p=0.01) of metagenomic species (MGS) when compared with healthy controls. A lower microbial diversity in patients with psoriasis compared with their partners was seen (p=0.04). Additionally, the functional richness was decreased in patients with psoriasis compared with healthy controls (p=0.01) and partners (p=0.05). The longitudinal analysis revealed no fluctuation in gut microbial composition in any of the groups. Adalimumab induced an excellent improvement in psoriasis severity but did not alter the gut microbiota. The findings support an association between psoriasis and the gut microbiota, but a causal relation between the psoriasis and the gut microbiota still needs to be shown. Future studies should be designed as large-scaled studies to validate results.

[O57]
HAND ECZEMA AS AN EXAMPLE OF THE MICROBIOTA IN HEALTH AND DISEASE

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Background. The pathogenesis of chronic hand eczema (HE) remains unclear. Insights into the skin microbiome in HE and its potential relevance to disease severity may serve as a stepping-stone towards an improved understanding of the underlying mechanisms for HE.
Objective. To characterize the microbiome in patients with hand eczema and healthy controls.
Methods. A five-visit prospective study over three weeks was conducted. Patients with chronic HE and healthy controls were recruited from February-August 2019. At each visit, bacterial swabs were taken from the hands of patients with HE and controls, and from the anterior nares. Disease severity was assessed using the Hand Eczema Severity Index (HECSI). The microbiome was examined using DNA extraction and 16S rRNA amplicon sequencing (V3-V4 regions). Analyses and bioinformatics were performed at Statens Serum Institute, Copenhagen, Denmark.
Results. Fifty patients with HE and 50 controls were included (follow-up rate = 100%). Baseline bacterial α-diversity was reduced on the hands of HE patients compared with healthy controls (effect size = –0.31; 95%CI [–0.50;–0.11]; p=0.003). The bacterial community structure differed between patients and controls (r=0.03, p=0.001). Patients with severe HE had lower bacterial α-diversity compared with mild HE (effect size=0.44; 95%CI [0.13;0.69]; p=0.008). The bacterial α-diversity and the bacterial community structure on the hands of patients and controls were stable over the three-week observational period.
Conclusions. Our results demonstrate a stable dysbiosis of the skin microbiome in HE patients, which was related to disease severity.

[O58]
THE MICROBIOTA IN ACNE AND ROSACEA AND ANTIBIOTIC STEWARDSHIP IN THESE CONDITIONS

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Changes in the local microbiota are thought to be important in the pathogenesis of acne and rosacea. For acne emphasis has been on sebaceous gland overgrowth by certain clonal types of *Cutibacterium acnes* leading to less diversity of the local microbiota and triggering of inflammation. Recently there has been an additional focus on the role of coagulase negative staphylococci and their interplay with *C. acnes* clones. For rosacea *Demodex* mites possibly play an important role. Interestingly, acne and rosacea patients may also show changes in their intestinal microbiota. Tetracycline antibiotics are used to treat both diseases, and it is still not clear if the main function is an effect on the microbiota or an anti-inflammatory effect. Due to the increasing problem of antibiotic resistance, it is suggested to restrict the use of antibiotics as much as possible. New studies provide hope that probiotics either applied on the skin or perorally can be developed for treatment and prevention.

[O59]
INTERACTIVITY BETWEEN COMPONENTS OF THE MICROBIOME IN PSORIASIS AND ATOPIC ECZEMA

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Atopic eczema and psoriasis are the two most common chronic inflammatory skin diseases. Both diseases are based on a strong inherited predisposition and triggered by environmental factors, leading to epidermal barrier deficiency and exaggerated T cell activation. The degree of clinical heterogeneity of atopic eczema and psoriasis is remarkable and, yet, poorly understood. Consequently, disease onset and progression are unpredictable and the optimal type and time-point for intervention are unknown. Evidence has accumulated that support the role of microbial exposures as a factor that may mediate immune polarization and atopic eczema and psoriasis pathogenesis. In recent work, we show that atopic dermatitis is dominated by one single species, S. aureus, associating with a disease relevant host transcriptomic signature enriched for skin barrier function, tryptophan metabolism and immune activation. Moreover, we demonstrate that these associations are dependent on skin site. In contrast, psoriasis is characterized by co-occurring communities of microorganisms and only very weak associations with disease related gene expression. Like in atopic eczema, also in psoriasis various species co-occur depending on the skin site. Nevertheless, it remains unclear whether disease-associated changes in the microbiota composition have a causal role in disease development or are merely the result of abnormal skin biology.

[O60]
EFFECT ON SKIN MICROBIOTA OF UVB AND OTHER TREATMENTS IN ATOPIC DERMATITIS

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The skin microbiome in atopic dermatitis is less diverse compared to healthy skin, and the abundance of Staphylococcus aureus much higher (1). Various treatment modalities, such as topical corticosteroids, narrow-band UVB treatment, and the monoclonal antibody dupilumab, have been shown to increase the diversity of the skin microbiota in atopic dermatitis (2–4). This shift in the microbiome is, however, reversible, and diversity decreases when treatment is discontinued. Reintroducing commensal skin bacteria could be a promising treatment strategy in atopic dermatitis. In one small-scale trial in humans, topical application of coagulase negative Staphylococcus species decreased the colonization of Staphylococcus aureus (5). In a similar study, topical application of the gram-negative commensal Roseomonas mucosa led to clinical improvement (6). Investigating and manipulating the skin microbiome may expand our treatment strategies for atopic dermatitis in the future.

[O61]
COMPARATIVE EPIDEMIOLOGY OF ACNE AND ROSACEA

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Abstract not available

[O62]
COMPARATIVE PATHOGENESIS OF ACNE AND ROSACEA

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Acne and rosacea are two skin diseases that share indistinguishable phenotypic features in the form of inflamed papules and pustules, and both can be treated with tetracyclines, isotretinoin and azelaic acid. Despite these similarities the pathogenesis of the two diseases is quite distinct though both include a genetic predisposition and possibly changes in the microbiome. Acne is mainly a disease of the seborrheic glands and new data shed more light on the specific molecular mechanisms, while rosacea among other things involves changes in innate immunity, vascular and nerve reactivity and associated co-morbidities. The present view of the pathogenesis of the two diseases will be reviewed and compared.

[O63]
STATE OF THE ART TRADITIONAL TREATMENTS FOR ACNE AND ROSACEA

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Introduction: Despite the fact that acne and rosacea are two different skin diseases, we can still find some parallels between them: the significance of inflammation, localization on the face, chronic recurrent course, a negative impact on quality of life, and some similarities of classical treatment modalities.
Purpose: To compare the traditional management of acne and rosacea.
Methods: The comparison is based on the current acne treatment guidelines from the European Dermatology Forum, the American Academy of Dermatology, the global ROSacea COnsensus panel, and on the most recent cited scientific literature.
Results: Topical and/or systemic antibiotics (T/SAb) retain their role in controlling skin inflammation and become the drugs of choice for rosacea. In the case of acne, T/SAb are not recommended as monotherapy. Usually, avoiding of prolonged courses and combination with benzoyl peroxide or topical retinoid (TR) is recommended. If subantimicrobial doses of tetracyclines are chosen for the long-term treatment in rosacea, similar doses are ineffective in acne. Versatile pathogenetic action evaluated TRs as the drug of choice for almost every form of acne: alone, during the remission, or in combination therapy, during the exacerbation of the disease. We can rely on the local anti-inflammatory effect of azelaic acid for rosacea. Systemic retinoids are the only pathogenically active drugs in severe acne, but there is still no effective treatment for rosacea.
Conclusions: The individualized combination therapy is recommended for the treatment success of acne and rosacea.

[O64]
PHYSICAL TREATMENT MODALITIES FOR ACNE AND ROSACEA

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Abstract not available

[O65]
WHAT IS THE FUTURE? UPCOMING AND RARE TREATMENTS FOR ACNE AND ROSACEA

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Acne and rosacea are widely considered as diseases with similar pathogenesis. However, acne is an inflammatory disease of the pilosebaceous unit, whose complex pathophysiology includes follicular plugging through keratinocyte hyperproliferation, aberrant innate immune response to various agents including bacterial antigens, in situ hyperresponsiveness to normal levels of circulating androgens and environmental factors (nutrition and smoking). On the other hand, the pathophysiology of rosacea is based on a complex dysfunction of various innate immunity factors, a specific cytokine/chemokine network as well as neuroinflammation and neurovascular changes in blood and lymph vessels triggered by UV light and cutaneous microorganisms, such as Demodex species. New registered or proposed topical acne treatments include dapsone in a niosomal formula, minocycline 4% foam, the retinoids tazarotene (0.045% lotion) and trifarotene (0.005% cream), the antiandrogens clascoterone (1% cream) and olumacostat glasaretil (7.5% gel), epigallocatechin-3-gallate (1% solution), cannabidiol liquid, nicotinic acid, N-acetylcysteine, anacardic acid, a p300 histone acetyltransferase inhibitor, and NAC-GED0507 gel, a new PPARγ modulator. Sarecycline, a narrow-spectrum tetracycline-derived antibiotic, represents the only new systemic acne treatment. New rosacea treatments include the α2- and α1A-adrenoreceptor agonists brimonidin (0.33% gel) and oxymetazoline (0.1% cream), ivermectin (1% cream), botulinum toxin intradermal injections and the systemically administered β-blocker carvedilol. It is obvious that the acne and rosacea treatment pipelines have experienced less innovative steps than expected in the last decades.

[O66]

SUPPORTING THE PATIENTS BEYOND SKIN - AT THE NATIONAL CENTER OF AUTOIMMUNE DISEASES

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Background: In Denmark 400.000 patients suffer from a chronic autoimmune disease which shares common pathology including: psoriasis, psoriatic arthritis, hidradenitis suppurativa, Crohn's disease, ulcerative colitis, and axial spondylitis. The current challenges include a siloed approach to care which may lead to lack of screening for other autoimmune disease and comorbidities, delayed referrals, socioeconomic challenges, and ultimately lack of patient centricity.
Aim: In 2019 the National Center for Autoimmune diseases was established as a pilot project with the primary aim to develop and evaluate an interdisciplinary intervention. Through patient centricity a team of doctors, nurses, a psychologist, a dietician, a social worker and secretaries help the patients manage the treatment, comorbidities and daily living with chronic autoimmune diseases. The nurses have a special role in the clinic by working with goal-based, share-decision-making tools to help the patients with better quality of life.
Methods: Patients with at least two autoimmune diseases are randomized 2:1 to either interdisciplinary clinic or usual care through a 6 months' treatment course. Our primary goal is patient-reported quality of life. Here we report interview-based qualitative data from XX patients treated in the center.
Conclusion: Preliminary insights indicate a high value of an interdisciplinary combined clinical intervention in patients with autoimmune diseases with themes mainly focusing on the value of a stable interdisciplinary team, trust, and a one-point-contact nurse setup.

[O67]

HOW TO UNDERSTAND VULNERABILITY AMONG MINORITY GROUPS - FOCUS ON CULTURE, SEXUAL IDENTITY, AND CHRONIC ILLNESS

Dorthe Nielsen
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Experiences from my work at the Migrant Health Clinic in Odense, have demonstrated that following particularly vulnerable and potentially vulnerable patients over time in different hospital wards can illicit important insights into the barriers and challenges patients face on their way through the health care system. The experiences underline that the weak points that refugee and migrant patients often suffer are also shared by other, ethnic Danish patients. For example, do many LGBT+ persons experience fear associated with receiving care later in life, mainly fear of discrimination by care workers or residents. Hence some older LGBT+ persons are afraid to feel pressure to go back into the "closet" and hide their identity from care workers and residents, fueling a feeling of isolation and loneliness. Patients' vulnerability can be difficult and challenging to deal with in clinical practice. In general, staff can get stressed by the special and often time-consuming needs that "vulnerable" patients may have. This increases the risk of reduced quality of care and unequal access to health care services for a marginalised group of patients. This presentation will elaborate on the concept of vulnerability and how the encounter between patients, relatives and professionals can be supported with cultural awareness and sensitivity.

[O68]

ADRESSING SEXUALITY IN DERMATOLOGIC NURSING CARE

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Sexuality is a basic human need. Clinical studies recognize that people living with different skin diseases are at risk of impaired sexuality. However, it seems that sexuality is not always included in the nursing assessment. Studies have uncovered barriers that give us knowledge about how we can improve our clinical practice and assess and address sexuality more frequently with our patients. Some of these barriers are; lack of knowledge and motive, the taboo, fear of negative feedback and the lack of clinical practice guidelines. In this talk I will discuss how we can assess sexuality. By increasing our knowledge and promoting a positive attitude to sexuality, combined with standardized use of the "Dermatology Life Quality Index" in a multidisciplinary approach, we may help meet our patient's needs.

FREE COMMUNICATIONS 1

[FC1]
LONG-TERM REMISSION OF DARIER'S DISEASE AND HAILEY-HAILEY DISEASE AFTER SUPERFICIAL RADIOTHERAPY

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Purpose: Darier's disease (DD) and Hailey-Hailey disease (HHD) are genodermatoses caused by mutations in genes coding for Ca2+-ATPase. They have a chronical relapsing course with keratotic papules (DD) and vesicles/erosions (HHD) with tendency to superinfections. Standard treatments attempt to control flares but do not result in long-term remission. In this case-series we rapport the efficacy of superficial radiotherapy (SR) for the treatment of severe treatment-refractory DD and HHD.
Methods: Patients were treated with SR with a total dose of 16 gray in each cycle (20 kilovolt; 8 fractions of 2 gray). Patients received SR in several separate body areas in 1–6 treatment cycles. Complete long-term remission was defined as no relapse during follow-up of at least 12 months.
Results: 10 patients with DD and 13 patients with HHD were treated with SR. 86 out of 96 treated areas (90%) achieved long term remission, and the mean follow-up was 33 months. 17 out of 23 patients (78%) responded with complete remission of all treated areas after the first treatment cycle and additional 4 patients experienced complete remission after the second SR cycle. The treatment was followed by severe inflammation followed by temporary slight hyperpigmentation of the treated areas. Dermatology Life Quality Index scores in HHD patients decreased from an average of 22 (the disease having extremely large effect on patient's life) to 3 (small effect on patient's life) after SR.
Conclusions: Superficial radiotherapy proves highly effective in the treatment of HHD and DD and provides long-term normalization of treated skin.

[FC2]
EXTRACORPOREAL PHOTOPHERESIS WITH 5-AMINOLEVULINIC ACID IN PATIENTS WITH GRAFT-VERSUS-HOST DISEASE

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Purpose: Extracorporeal photopheresis (ECP) therapy exposes isolated white cells from patients' blood to photoactivatable 8-methoxypsoralen (8-MOP) and UVA light to induce apoptosis of T-cells and thereby modulate immune responses. A modification of the current standard therapy with the use of 5-aminolevulinic acid (ALA), for more selective and effective targeting of activated T-cells may improve treatment efficacy. The main purpose of this phase I-(II) study was to evaluate the safety and tolerability of ALA-ECP in chronic graft-versus-host disease (cGvHD) patients.
Methods: Patients with cGvHD who responded inadequately to 8-MOP-ECP were considered for inclusion. A standard approved photopheresis system with ALA instead of 8-MOP was used. Patients received up to 20 treatments with regular follow-ups. Safety and tolerability were regularly monitored through clinical and laboratory examinations and patient reports. Assessments of various organs were repeated.
Results: The study included 82 treatments in five patients. No significant persistent changes in vital signs or laboratory values were detected. In total, 62 adverse events were reported of which two were severe, 17 were moderate, and 43 were mild symptoms; none of these events considered to be likely related to the study medication. Skin scores were in particular improved.
Conclusions: The results indicate that ALA-ECP is safe and tolerated by the patients. Most adverse events were in the mild-to-moderate range of severity. An improvement in the patients' skin scores were observed during the study period.

[FC3]
ALTERED MATURATION OF THE SKIN BACTERIAL COMMUNITIES OF INFANTS WITH ATOPIC DERMATITIS

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[1]Bispebjerg Hospital, Department of Dermatology, Copenhagen NV, Denmark [2]The Globe Institute, Faculty of Health, University of Copenhagen, Copenhagen, Denmark [3]Statens Serum Institute, Department of Bacteria, Parasites and Fungi, Denmark [4]Department of Immunology and Microbiology, Leo Foundation Skin Immunology Research Center, University of Copenhagen, Denmark

Purpose: To investigate the temporal dynamics of the skin microbiome in infants with atopic dermatitis (AD) compared to healthy infants.
Methods: Nineteen infants with AD and 19 healthy infants were evaluated 3 times with 3 months intervals within the first 30 months of life. Tape-strips were collected from volar forearms, cheeks and eczema lesions, and the skin microbiome was assessed by metabarcoding the 16S rRNA gene in material from tape-strips.
Results: The skin microbiome of infants with AD significantly differed from healthy infants both with respect to community composition and amplicon sequence variants (ASV) richness (higher ASV richness in healthy). While both the community composition and ASV richness of healthy infants significantly correlated with age in months with ASV richness increasing with time, such a temporal pattern was not revealed for AD infants. The abundance of Staphylococci was not increased in infants with AD compared with healthy infants and the community composition was not related to disease severity.
Conclusions: The skin microbiome of infants with AD evolved in a less predictable way than healthy infants, indicating a slower maturation of the skin bacterial communities in AD. These alterations were not driven by an increase in Staphylococci, suggesting that early-life microbiome changes may precede the staphylococcal predominance observed in adult AD1.
Acknowledgements: This work was funded by the Leo Pharma Foundation.

[FC4]
DNA-CHIP-BASED MOLECULAR TESTING FOR THE DIAGNOSIS OF TINEA

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Purpose: Worldwide, 20–25% of the population is affected by dermatomycosis. Albeit the diagnosis of tinea is regarded as straight forward, several cases present atypically causing an oc-

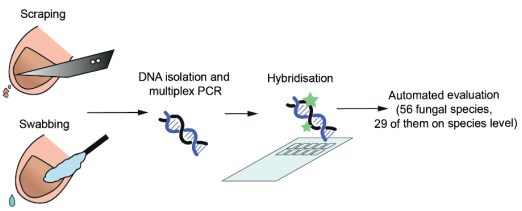
casional oversight. Furthermore, direct microscopy and culture have a moderate sensitivity, and obtaining definite results from culture may take several weeks. Histological examination of a skin biopsy is rarely used because it is an invasive procedure and, despite a good sensitivity, does not allow a species identification. Recently we had several cases in which diagnosis of tinea could only be established using DNA-chip-technology (EUROArray Dermatomycosis array).

Methods: Based in this experience, we here prospectively compared the diagnostic value of DNA-chip-technology in a single-center prospective diagnostic study with microscopy and culture in patients with suspected onychomycosis (OM, *n*=67) and/or tinea pedis (TP, *n*=73), as well as healthy controls (*n*=43). In addition, to test, if swabs can be used as an alternative for scraping, samples were obtained by scraping or swabbing (Figure 1a).

Results: For OM and TP, DNA-chip-technology had the highest sensitivity. Combination of DNA-chip-technology with microscopy further increased the sensitivity, and results from this combined laboratory diagnosis can be obtained within 24 hours. Increased sensitivity of DNA-chip-technology was accompanied by a lower specificity (Figure 1b). Comparison of sampling techniques (scraping, dry or wet swab) for DNA-chip-technology showed similar results in suspected OM or TP.

Conclusions: Collectively, our results highlight the use of molecular diagnosis in OM and TP and demonstrate that swabbing is as sensitive and specific as scraping in establishing the correct diagnosis.

a



b

Method →	Microscopy	DNA	Culture	Microscopy /DNA	Microscopy /Culture	DNA / Culture	Microscopy /Culture /DNA
Time to diagnosis	< 2h	< 18 h	< 4 weeks	< 18 h	< 4 weeks	< 4 weeks	< 4 weeks
Onychomycosis	26 (68.4 %)	30 (78.9 %)	11 (28.9 %)	35 (92.1 %)	30 (78.9 %)	33 (86.8 %)	38 (100 %)
Tinea pedis	20 (37 %)	49 (90.7 %)	24 (44.4 %)	52 (96.3 %)	32 (59.3 %)	51 (94.4 %)	54 (100 %)
Tinea corporis a.o.	18 (60 %)	21 (70 %)	10 (33.3 %)	29 (96.7 %)	20 (66.7 %)	24 (80 %)	30 (100 %)

[FC5]
A STATUS ON HIGH-RESOLUTION ANOSCOPY - IN DENMARK

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Purpose: The presentation is a follow-up talk since the presentation "High-resolution anoscopy and anal intraepithelial neoplasia – Starting from scratch in the Nordic Countries", at the 33rd NCDV in Trondheim.

Methods: High-resolution anoscopy (HRA) is a diagnostic method to diagnose anal and perianal HPV-related lesions, including anal high-grade squamous intraepithelial lesions (HSIL). HRA has been adapted from colposcopy used to screen for cervical precancer. HRA differs from standard anoscopy by the application of acetic acid 3–5% and iodine-based Lugol's solution, and visualization under magnification of lesions that would otherwise not be visible to the naked eye. HRA was initiated in the 1990s in the Anal Neoplasia Clinic, University of San Francisco, and has since been introduced in many other countries. However, no national recommendations exist on anal cancer screening including HRA. In the Scandinavian countries, HRA has only been introduced in one clinical setting still.

Results: Studies on anal HSIL have mainly focused on men who have sex with men. Registry-based studies have shown that organ transplant recipients also have an increased risk of anogenital HPV-related (pre-) cancers due to their iatrogenic immunosuppression. The presentation will give an overview of the most recent Danish research on anogenital HPV-related lesions among Kidney transplant recipients

Conclusions: Kidney transplant recipients have an increased risk of anogenital HPV-related lesions. HRA is an important diagnostic method to diagnose anal precancer lesions. The presentation will advocate for the introduction of HRA in the Scandinavian countries.

FREE COMMUNICATIONS 2

[FC6]
DISCRIMINATING BASAL CELL CARCINOMA AND BOWEN'S DISEASE WITH NOVEL HYPERSPECTRAL IMAGING SYSTEM AND CONVOLUTIONAL NEURAL NETWORKS

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Purpose: Skin cancers are the commonest cancer type in the world. With non-invasive imaging technologies it is possible to make an early diagnosis and thus reduce the burden of the disease. Hyperspectral imaging (HSI) is a relatively fast non-invasive imaging method with large field of view and combining it to machine learning and convolutional neural networks (CNN) enables interpretation of the data independent from the user.

Methods: In total, 119 lesions were analysed, with 27 intradermal nevi (ID), 22 basal cell carcinomas (BCC), 40 seborrheic keratoses (SK) and 30 Bowen's disease (BD). All lesions were imaged with our novel HSI-system, which provides 3D data of the object through photometric stereo imaging and specific depth data of each wavelength, additionally to the hyperspectral data. Histopathological samples were obtained to confirm the diagnosis. A CNN was trained with the leave-one-out cross validation method. The images were classified with pixel-wise and majority voting methods.

Results: In the majority voting, classifying of BCC, ID and healthy skin the sensitivity was 89%, specificity 94% and positive predictive value 90%. For BD, SK and healthy skin the results were respectively 87%, 92% and 87%. Pixelwise analysis provided map-like presentations of the results (Figure 1).

Conclusions: This pilot study using a novel non-invasive HSI-CNN system shows a good sensitivity, not compromised by low specificity, and proves the HSI-CNN camera useful in discriminating malignant from benign, in common, mainly non-pigmented skin cancer types. Larger multicentre trials are warranted.

Figure 1A: An example of the pixel-wise classification of an intradermal nevus

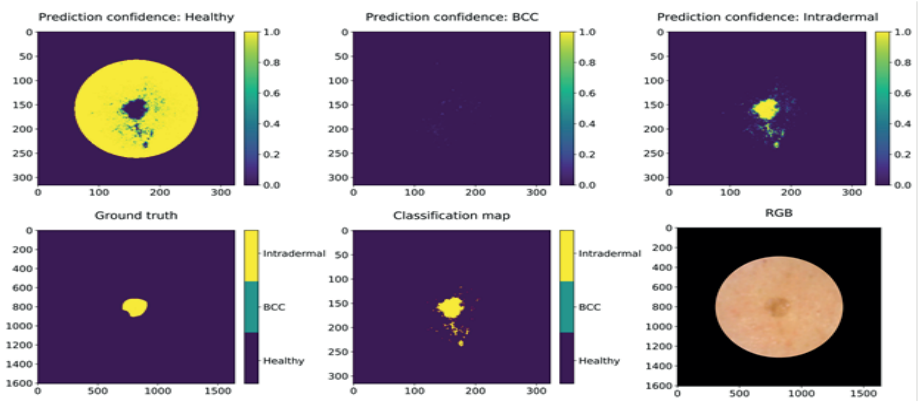
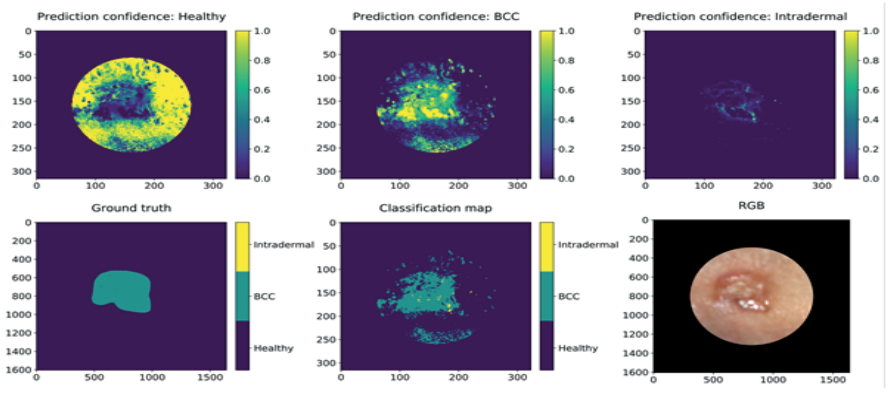


Figure 1A: An example of the pixel-wise classification of a basal cell carcinoma



[FC7]
POROKERATOSIS IS ONE OF THE MOST COMMON GENODERMATOSIS

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Purpose: The study was prompted by a notion that numbers of patients with genodermatoses and their healthcare needs are largely unknown both regionally and nationwide.
Methods: The patient registry of Sahlgrenska University Hospital was searched for patients who had ICD-10 diagnosis of genodermatoses (Q80-Q82 or Q84), phacomatosis (Q85), or Gorlin syndrome (Q875) in the time period of 2016 to 2020. Clinical data was extracted from the patients' medical records.
Results: Overall, 298 patients with 36 different genodermatosis diagnoses were identified. The largest patient group (n=117, 39%), had a diagnosis of porokeratosis (Q828T). The next most common were neurofibromatosis (n=32, 11%), ichthyoses (n=26, 9%), Gorlin syndrome (n=18, 6%), and Hailey-Hailey disease (n=15, 5%) while Darier disease (n=13) and epidermolysis bullosa (n=12) formed about 4% each. Of the patients with porokeratosis, 68 patients were diagnosed clinically, 13 patients by teledermatology referral, and 27 patients through histopathology. Nine patients were excluded based on another skin disease in skin biopsy. According to the number, size, and distribution of the lesions the most common clinical type was disseminated superficial actinic porokeratosis with 57 patients (54%). 44 patients had porokeratosis of Mibelli (42%), 2 patients had genitogluteal porokeratosis (2%) and 1 patient had linear porokeratosis (1%).
Conclusions: Porokeratosis may not have been considered as inheritable, but since various types of porokeratosis have recently been shown to have a genetic background, the results suggest that porokeratosis is one of the most common genodermatosis.

[FC8]
VALIDATION OF A NEW ITEM FOR DIAGNOSING PRIMARY HYPERHIDROSIS

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Purpose: The Multi-Specialty Working Group on the Recognition, Diagnosis, and Treatment of Primary Focal Hyperhidrosis developed evidence-based consensus criteria for diagnosing primary hyperhidrosis (PHH). The criteria consist of seven items and additionally, secondary HH needs to be excluded. This study's purpose is to validate an item for diagnosing PHH.
Methods: This is a cross-sectional diagnostic accuracy-study. Questionnaire-data were collected from blood donors upon blood donation between June and December of 2021 in Denmark. The index-test was the item 'Have you had troublesome sweating?' The responses 'Yes, moderately' or 'Yes, severely' were classified as PHH, 'No' as absence of PHH, and 'Yes, mildly' or 'I do not know' as intermediate. The reference-test was the consensus criteria for diagnosing PHH.
Results: Overall, 1,039 (95.9%) of 1,083 eligible blood donors completed the index- and reference-tests. The reference-test classified 59 (5.7%) participants as having PHH and 980 as not having PHH. Of the participants with PHH, 29 had a positive index-test and 2 a negative, while of the participants without PHH, 47 had a positive index-test and 702 a negative. The index-test's sensitivty was 0.94 (95% confidence interval [CI] 0.77–0.99), specificity 0.94 (95% CI 0.92–0.95), positive predice value 0.38 (95% CI 0.27–0.50) and negative predictive value 1.00 (95% CI 0.99–1.00).
Conclusions: With a high diagnostic accuracy, this single item allows for the identification of individuals with and without PHH, which may prove useful in epidemiological research. Validation in the general popultion is warranted.

[FC9]
ALLERGIC REACTION IN RED TATTOOS – THE CAUSATIVE MECHANISM?

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Purpose: Allergic reaction in red tattoos is one of the commonest tattoo reaction types.
Methods: Various studies have been performed to determine the etiology behind allergic reactions. Ninety patients with allergic tattoo reactions have been patch tested with a baseline of allergens, disperse dyes/textile allergens, and a selection of tattoo ink stock products. Also, one hundred and four dermatome shaved biopsies from patients with red tattoo allergy have been examined by matrix-assisted laser desorption/ionization tandem mass spectrometry (MALDI-MS/MS) to detect organic pigments and metal concentrations by inductively coupled plasma (ICP)-MS and x-ray fluorescence (XRF).
Results: Patch testing had primarily negative outcomes thus, the allergen(s) responsible for allergic reactions in red tattoos are not directly present in tattoo ink. Allergens are likely to be generated in the skin over weeks or months through haptenization. Pigment red 22, pigment red 170 and pigment red 210 were mainly detected in the dermatome shaved biopsies from chronic tattoo reactions. The epitope causing the reaction is probably a degradation product. Nickel and chromium were detected but only exceptionally causing reaction.
Conclusions: The reason behind allergy in red tattoos cannot be found directly in the ink stock products. A hapten is formed over time from some unknown pigment particle precursor. Ink manufacturers need to produce inks that comply with a new EU regulation with more than 4000 restrictions on chemical contents in inks. The regulation foreseeably may not influence the problem of allergy in red tattoos.

[FC10]
DECISION SUPPORT FOR TREATMENT ELIGIBILITY ASSESSMENT OF HIRSUTE WOMEN

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Purpose: To identify clinical problems fit for streamlining by artificial intelligence-based decision support.
Methods: Systematic review inspired by the PRISMA Criteria for evaluation of existing literature, 2145 publications were identified

and 64 included in the study. Retrospective image classification by customized VGG-16 model, trained on 16.543 non-standardized clinical images of five clinically similar skin diseases. To determine inter-rater variability in assessment of hirsute women's eligibility for laser treatment, a total of 120 hirsute women were classified with one of five variables by 20 health care professionals. Level of agreement was calculated by Fleiss kappa.

Results: The VGG-16 based model distinguished acne and rosacea with AUC of 0.93 (95% CI: 0.88–0.98), psoriasis and eczema with AUC of 0.86 (95% CI: 0.84–0.88) and eczema and t-cell lymphoma with AUC of 0.88 (95% CI: 0.85–0.91). Poor to moderate level of agreement (kappa: 0.48–0.6) was found in classifying hirsute women.

Conclusions: By studying the literature, we identified 1) an insufficient focus on decision support for generalized skin diseases, 2) no models aimed for specific treatment of skin disease, and 3) a lack in models trained on non-standardized clinical images, i.e. non-dermoscopic imagery. The eligibility assessment for laser treatment of hirsute women, was found highly influenced by chance, even when performed by board certified dermatologist. An unequal patient journey for hirsute women highlights the need for clinical decision support to ensure a fair and streamlined referral process.

Acknowledgement: Study was funded by Sundhedsinnovationsfonden Region Midt, Helsefonden, A.P.Møller Mærsk Lægefonden, Psoriasis Foreningen and Højmose Legatet.

GUIDED POSTER WALKS

[PW1]

OPTIMIZING TREATMENT OF ACNE WITH PHOTODYNAMIC THERAPY TO ACHIEVE LONG-TERM REMISSION AND REDUCE SIDE EFFECTS

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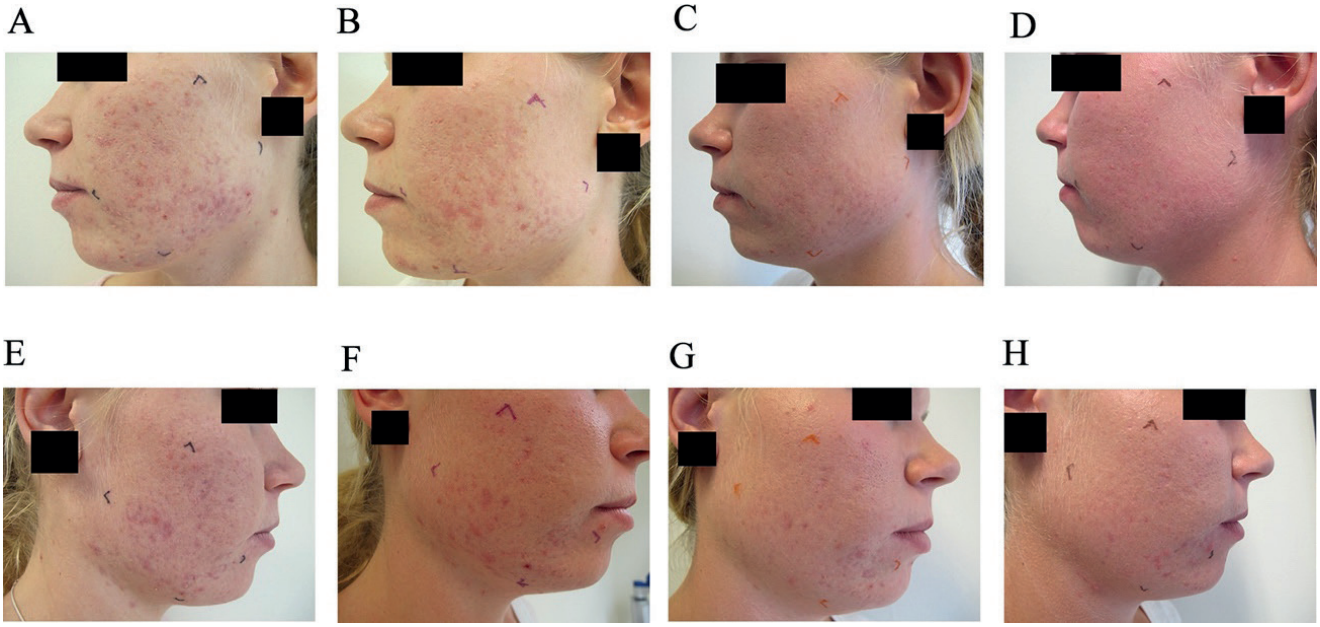
Purpose: Photodynamic therapy with methyl aminolevulinate (MAL-PDT) is an effective treatment of acne vulgaris but is associated with side effects. The principal objective of this prospective, double-blinded, split-face, randomized, placebo-controlled study was to investigate the efficacy and tolerability of MAL-PDT treatment with an extended follow-up period in patients with mild to severe acne vulgaris.

Methods: Patients (*n*=33) were randomized to two or four treatments of PDT with MAL on one cheek and placebo vehicle on the other cheek, 1–2 weeks apart. A 1.5-h pre-treatment with the MAL cream was followed by illumination with red light (20 J/cm^2). Assessments were performed before treatment and 4, 10, and 20 weeks after the last treatment.

Results: In comparison to baseline, the number of inflammatory lesions at 20 weeks on cheeks treated with MAL-PDT showed a relative decrease of 74% in the group with two and 85% in the group with four treatments. Improvement of acne treated with four sessions of MAL-PDT (a–d) and placebo-PDT (e–h)

Conclusions: This new treatment regimen for both MAL-PDT and red-light-only PDT, with shortened pre-treatment and reduced light dose, could be an effective modality achieving an effect that can last for 20 weeks with tolerable side effects. Future research investigating the use of red light alone or combination with other topical treatments is needed.

Acknowledgements: The MAL cream used in this study was donated by Galderma Nordic AB



[PW2]

THE PREVALENCE OF LOSS-OF-FUNCTION FILAGGRIN GENE MUTATIONS AND ASSOCIATION WITH ATOPIC DERMATITIS ACROSS GEOGRAPHICAL LATITUDES AND ETHNICITIES: A SYSTEMATIC REVIEW AND META-ANALYSIS

Casper Milde Khatib[1], Amalie Wandel Klein-Petersen[1], Amalie Thorsti Møller Rønnstad[1], Alexander Egeberg[1], Maria Oberlander Christensen[1], Jonathan Silverberg[2], Simon Francis Thomsen[1,3], Jacob Thyssen[4]

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Purpose: While loss-of-function (LoF) mutations in the filaggrin gene (FLG) are strongly associated with atopic dermatitis (AD), the magnitude of this relationship in different geographies and ethnicities remains unknown. This systematic review and meta-analysis examined i) the prevalence of LoF FLG mutations in the general population and in AD patients, ii) associations between LoF FLG mutations and AD, by geography and ethnicity.

Methods: PubMed and Embase were searched from the 21st of September 2021 until the 29th of October 2021. Title/abstract and full-manuscript review, and data extraction were performed independently by two reviewers.

Results: Overall, 273 manuscripts were included, representing 236 studies. There was a significant association between AD and LoF FLG mutations in Northern (odds ratio [95% confidence interval]=3.24 [1.28–4.25]), Western (3.56 [2.94–4.30]), Eastern (4.23 [2.52–7.12]) and Southern (2.35 [1.20–4.60]) Europeans. This was also the case for European and African descendants residing in North America (3.70 [2.42–5.60]; 6.64 [2.17–20.32]), Eastern Asians (3.41 [2.56–4.55]) and Oceanians (2.37 [1.48–3.80]). There were no associations between AD and LoF FLG mutations in Africans (1.06 [0.02–53.80]), South Asians (1.35 [0.31–5.82]) and Turks (1.17 [0.12–11.34]). The pooled prevalence of LoF FLG mutations differed by geography and ethnicity, in the general population and AD patients (Figure 1).

Conclusions: Associations between LoF FLG mutations and AD depend on ethnicity and geography. The prevalence of LoF FLG mutations may provide new insights in the tracing of human migration routes.

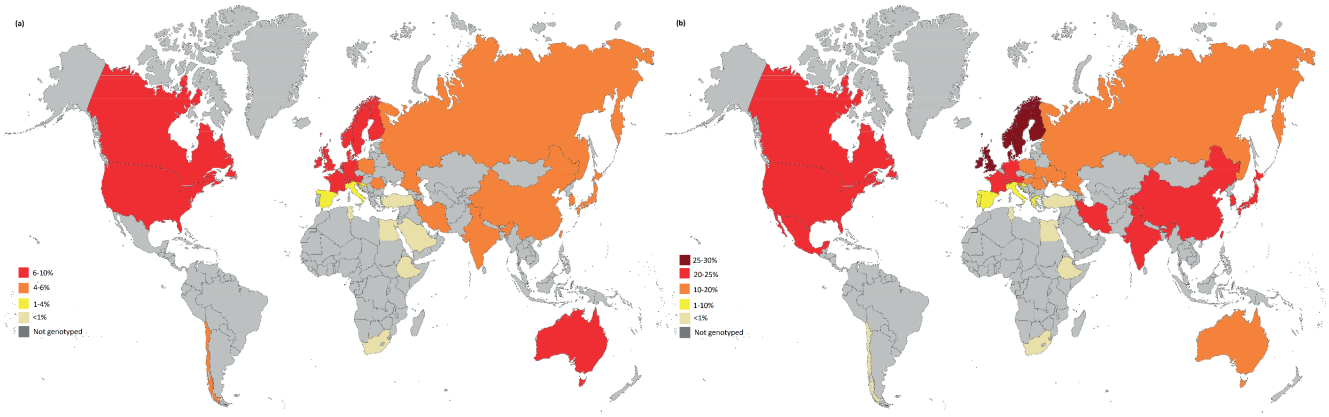

Fig. 1. The pooled prevalence of LoF FLG mutations in (a) the general population and (b) AD patients

[PW3]

BARICITINIB, AN ORAL REVERSIBLE JANUS KINASE-1 AND -2 INHIBITOR, FOR ATOPIC DERMATITIS: HEAD AND NECK RESPONSE FROM BREEZE-AD4 AND BREEZE-AD7

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Purpose: Baricitinib (BARI; an oral, selective, reversible JAK1/2 inhibitor) efficacy was investigated for atopic dermatitis (AD) patients with head/neck involvement in BREEZE-AD4 and BREEZE-AD7.

Methods: BREEZE-AD4 and BREEZE-AD7 were multicentre, randomized, double-blind, placebo-controlled, Phase 3 studies evaluating efficacy and safety of BARI with topical corticosteroids (TCS), topical calcineurin inhibitors (TCIs)/topical PDE-4 inhibitors, where approved, in adults with moderate-to-severe AD with inadequate responses to topical therapies (AD7) or who experienced failure, were intolerant to, or had a contraindication to cyclosporine (AD4). Patients were randomized 1:1:1 to PBO:BARI 2-mg:4-mg QD for 16 weeks (AD7; *N*=329), and 1:1:2:1 to PBO:BARI 1-mg:2-mg:4-mg QD for 52 weeks (AD4; *N*=463). Patients could use low-to-moderate potency TCS/TCIs/topical PDE-4 inhibitors to treat lesions. Least-square Mean (LSM) from mixed-model repeated measures were reported for EASI total score and head/neck subscore%-improvement data.

Results: Baseline head/neck involvement occurred in 98.2% (AD7) and 98.3% (AD4) patients. Mean baseline EASI total scores: 29.6 (AD7); 31.8 (AD4). Mean baseline EASI head/neck subscores: 30.9 (AD7); 31.3 (AD4). In both, Week-16 LSM EASI%-improvement was significantly higher for BARI vs PBO. In AD7, significantly higher proportions of patients achieved Week-16 EASI50 and EASI75 (total score and head/neck subscore) in response to BARI vs PBO. In AD4, the proportions of patients achieving EASI50 and EASI75 were significantly higher for BARI 4-mg (EASI50, EASI75) and 2-mg treatment (EASI50) vs PBO. In the head/neck, proportions of patients achieving EASI50 and EASI75 were not significantly altered.

Conclusions: BARI treatment showed rapid and substantial improvements in AD head/neck severity.

Presented: EADV2021.

Funding: Lilly.

[PW4]

FACIAL ECZEMA IN HEALTHCARE WORKERS USING PERSONAL PROTECTIVE EQUIPMENT DURING THE COVID-19 PANDEMIC - A SURVEY AT SIX DANISH HOSPITALS

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Adverse skin reactions are frequently reported by healthcare workers (HCWs) using face personal protective equipment (F-PPE) during the COVID-19 pandemic (Skiveren 2022). The skin is constantly provoked due to occlusion and friction by using F-PPE. This leads to itchy, dry, irritated, scaly and or red skin, which can be associated with eczema. This study is based on self-reported symptoms.

Purpose: To describe the prevalence of red and irritated skin and risk factors related to the use of F-PPE among frontline HCWs at six Danish hospitals.

Methods: A questionnaire survey was sent electronically to 22.993 HCWs.

Results: The response rate was 44.7% (*n*=10.287). Of those, who used both surgical masks and FFP2-3, 37.8% (*n*=3893) reported red and irritated skin. Nurses were the largest group of responders (*n*=5924, 71.8%) and had significant more often red and irritated skin (*n*=2530, 42.7%) than physicians (*n*=553, 23.7%). Female HCWs (*n*=8854, 86.1%) had significant ($p>0.001$) more often symptoms (*n*=3575, 40.4%) than men (*n*=318, 22.2%). The responders who reported chronic skin disease like atopic dermatitis (*n*=560) had more often red and irritated skin (53.2%) than those without (37.0%) ($p<0.001$). Some skin types were more prone to have red and irritated skin; sensitive skin (42.2% based on *n*=1998), combined skin (42.2% based on *n*=1453), dry skin (32.2% based on *n*=5263), and oily skin (31.4% based on *n*=986). The difference between the skin types was significant, unless between dry and oily skin ($p=0.629$).

Conclusions: To minimize adverse skin reactions due to the use of F-PPE, individual risk assessment is needed.

[PW5]

ECTODERMAL DYSPLASIAS IN DENMARK: IDENTIFICATION AND CHARACTERIZATION OF A NATIONWIDE COHORT

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Purpose: Ectodermal dysplasia (ED) is a large group of rare genetic disorders of the skin and skin appendages. Common features of ED include hypohidrosis, hypotrichosis, and hypodontia. The epidemiology of ED is poorly investigated and large population-based studies of this group of disorders are needed. Therefore, we aimed to identify a large nationwide cohort of patients with ED allowing population-based investigations of the disease epidemiology.

Methods: The Danish National Patient Registry was searched for hospitalizations and out-patient contacts registered with International Classification of Diseases (ICD)-10 diagnoses indicative of ED from 1995–2021. The search was extended using the Danish Central Dentistry Registry (1995–2021), Danish Database of Rare Diseases (2007–2021), and Danish Database of Genodermatoses (2018–2021). Medical records of all identified patients are then reviewed for validation and for detailed patient characterization.

Results: A detailed three-level algorithm of various ICD-10 codes has been developed for the identification of the ED patient cohort. The first level includes available ICD-10 codes for specific ED disorders, whereas level two and three are based on ICD-10 codes for cardinal and minor phenotypical features of ED disorders. We will commence data collection from medical records shortly.

Conclusions: Nationwide health registries are a valuable resource in the identification of a large population-based cohort of ED. However, validation from patient medical records is important when studying rare disorders as ED.

Acknowledgements: The study is supported by grants from Aarhus University, Aage Bangs Fond, Lægefonden (A.P. Møller Fonden), Nordic Dermatology Association, and the Gerhard Brøndsted Grant.

[PW6]

THE EFFECT OF COVID-19-ASSOCIATED STRESS ON THE HEALTH OF BLOOD DONORS WITH SYMPTOMS OF HIDRADENITIS SUPPURATIVA, HYPERHIDROSIS OR PSORIASIS

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Purpose: The burden of different dermatoses may vary with ensuing different degrees of sensitivity to stress. Thus, we compared the stress and health-related quality of life (HRQoL) before and during the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic and the subsequent societal lockdown.
Methods: The study cohort was the Danish Blood Donor Study. Overall, 12,798 participants completed a baseline questionnaire before the pandemic, between June 2018 and December 2019, and a follow-up questionnaire during the pandemic, between May and July of 2020. The classification of dermatoses was based on responses in the baseline questionnaire and hospital diagnoses. Logistic and linear regression determined the association between the dermatoses and the outcomes.
Results: Overall, 1,168 (9.1%) participants had hyperhidrosis, 363 (2.8%) hidradenitis suppurativa and 402 (3.1%) psoriasis. At follow-up, hyperhidrosis was associated with a worse mental HRQoL (adjusted coefficient –0.59 [95% confidence interval –1.05, –0.13]) and hidradenitis suppurativa with a worse physical HRQoL (adjusted coefficient –0.74 [95% confidence interval –1.21, –0.27]) independent of the baseline HRQoL. Hyperhidrosis was also associated with moderate-to-severe stress (adjusted odds ratio 1.37 [95% confidence interval 1.13, 1.65]) independent of the baseline stress level. No association with psoriasis was observed.
Conclusions: Individuals with hyperhidrosis and hidradenitis suppurativa may have been particularly affected during the SARS-CoV-2 pandemic and the societal lockdown. This indicates that individuals with these dermatoses may be especially susceptible to external stress in general.

[PW7]

CHARACTERISTICS OF PATIENTS WITH HIDRADENITIS SUPPURATIVA AND CONCOMITANT INFLAMMATORY BOWEL DISEASE

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Purpose: Several conditions, including inflammatory bowel disease (IBD), are more common in patients with hidradenitis suppurativa (HS). However, little is known about the clinical characteristics of patients with HS and concomitant IBD (i.e. Crohn's disease (CD) and ulcerative colitis (UC)).
Methods: A total of 571 outpatients (age≥18) with HS from a dermatological university department were included. Demographic factors, body mass index (BMI), comorbidities, disease severity measured by Hurley stage and Hidradenitis Suppurativa Score (HSS), and biomarkers in blood were examined.
Results: The median age was 39 years (IQR 28.6–51.2); 63.2% female and 79.1% smokers. The overall prevalence of IBD was 7.7% (CD: 5.6%, UC: 2.1%). IBD was found among 2.3%, 4.6% and 8.8% of patients with Hurley stage I, II and III, respectively. At enrollment, patients with concomitant IBD had a median disease duration of 6.6 (IQR 2.9–16.4) and 10.3 years (IQR 4.4–23.6) for HS and IBD, respectively. Patients with HS and concomitant CD had higher HSS (40.8 vs. 23.7, $p<0.01$), alanine aminotransferase (31.5 vs. 25.1 U/L, $p<0.05$), C-reactive protein (11.7 vs. 6.7 mg/L, $p<0.05$), erythrocyte sedimentation rate (25.0 vs. 14.6 mm, $p<0.01$), neutrophils (6.3 vs. 5.4 x10^9/L, $p<0.05$), and neutrophil/lymphocyte ratio (3.2 vs. 2.4, $p<0.01$) compared with HS patients without CD. No statistically significant differences were found between HS patients with/without concomitant UC.
Conclusions: Patients with HS and concomitant CD have more severe disease presentation of HS and higher systemic inflammatory load compared with HS patients without IBD, while no pattern was observed regarding the presence of co-occurring UC.

[PW8]

CLINICAL SUBTYPES OF HIDRADENITIS SUPPURATIVA

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Background: Hidradenitis Suppurativa (HS) is an inflammatory skin disease affecting the intertriginous regions of the skin. The clinical presentation of the diseases varies, and it has recently been proposed that HS can be subclassified according to clinical phenotypes. Previous attempts have been insufficiently powered or had too few variables to provide the desired utility.
Objective: To classify HS patients into clinically meaningful subtypes based on factor analysis and cluster analysis.
Methods: This is an explorative, descriptive multicenter study. Anonymized datasets describing pre-defined basic clinical parameters in HS will be collected and analyzed using factor analysis supplemented by computation of the empirical Kaiser criterion and hierarchical and K-means clustering. Data will be collected from

the following sources: partners from the industry, the European Registry for HS (ERHS), and academic centers.
Results: A global cohort of approximately 5,000 patients will be established. Nine centers have currently agreed to participate.
Conclusion: The unbiased subclassification of heterogenous diseases is necessary to aid investigations into the pathogenesis of the disease. Various HS subtypes may indicate different pathogenic mechanisms or even etiology and eventually a need for novel different therapeutic approaches.

[PW9]
MAGNETIC INKS: ADVERSE EFFECTS IN TATTOOED PATIENTS UNDERGOING MAGNETIC RESONANCE IMAGING

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Purpose: It is a common routine to screen the patients for metallic implants and wearables before entering a clinical MRI. Nearly all tattoo ink products contain metallic ingredients and contaminants, which might be influenced by a magnetic field. It is reported in the literature that patients during MRI can experience a fast onset of stinging, burning, and painful sensations in tattoos, occasionally followed by erythema and oedema, leading to termination of the MRI-procedure. The pathophysiology remains unexplained but is shown not to be a consequence of thermal heating. Persons with permanent eyeliners and eyebrows are at higher risk. Iron oxide pigments are commonly used in cosmetic inks. These pigments can be made from earth minerals thus invariably contaminated with metals including nickel, cobalt, chromium, and copper. Some oxide minerals are magnetic and will be affected when exposed to MRI conditions.
Methods: Magnetic and non-magnetic cosmetic tattoo inks were identified from a local cosmetic tattooist using handheld magnets. The chemical composition of the ink samples was analysed of by ICP-MS, Mössbaur spectroscopy, and X-ray fluorescence.
Results: High levels of metallic contaminants (nickel, cobalt, chromium, and copper) and mineral oxides (magnetite, hematite, and goethite) were found in the magnetic ink samples. Only limited iron and no ferromagnetic minerals were detected in the non-magnetic inks.
Conclusions: We have been able to identify the mineral expected to cause burning sensations in tattoos during MRI. Results will be discussed.

[PW10]
ESTABLISHING A NURSE-LED CLINIC FOR THE FOLLOW-UP OF PATIENTS TREATED WITH BIOLOGICS

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Background: Growing use of various 'biologics' has increased our knowledge and familiarity with this class of drugs. Guidelines exist and consequently standardized follow-up is possible. In order to ensure adherence to guidelines concerning monitoring and to ensure that resources are available for this task our department has organised a Nurse-led Clinic for follow-up of patients treated with Biologics.
Method: A narrative describing our experience and a survey of how often the nurse-led consultation required the involvement of a physician.
Materials: Follow-up of psoriasis patients in any kind of biological treatment, e.g., anti-TNF or anti-IL-17, who achieve a stable clinical result are seen once yearly by a physician, and all additional follow-up takes place in a nurse-led clinic. Here patients are seen every 6 months, and the basic effect and safety parameters checked. The collective experience from the inception of the clinic in 2013 provides the background for the narrative.
Results: The system has functioned smoothly since 2013 without any major incidents and has shown itself capable of absorbing the addition of new drugs. It has only undergone minor adjustments of a practical nature to accommodate workflow. In our experience the establishment of a nurse-led clinic has not only liberated physician-resources to other clinical work, but also led to an increase in nurses' competences and added to the positive work-involvement. Only a small proportion of the nurse-consultations require the involvement of a physician, mostly for filling in new prescriptions.
Discussion: The clinic constitutes an important contribution to both clinical and organizational management of patients treated with a range of biologics. It strongly supports quality assurance initiatives; it provides additional experience to the nurses involved through transfer of clinical tasks from physicians to nurses and it makes the workflow more effective.

[PW11]
DISCOVERING NOVEL GENES AND CAUSAL RELATIONSHIPS FOR PSORIASIS: THE HUNT STUDY

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Purpose: Genome-wide association studies (GWAS) have identified more than 80 genetic loci for psoriasis and directly informed the development of effective treatments and prevention strategies. However, less than 30% of the variance in genetic liability has been accounted for. To identify novel genes and causal relationships for psoriasis we utilized data from the Trøndelag Health Study (HUNT) in combination with meta-analyses through international collaborations.
Methods: Genotyping and imputation were performed for 5,370 psoriasis cases and 64,051 psoriasis-free controls from HUNT. We ran a GWAS using a logistic mixed model as implemented in SAIGE. Summary statistics from physician diagnosed psoriasis cases and controls in HUNT were included in meta-analyses by the International Psoriasis GWAS Consortium including 18 datasets totaling 36,466 cases and 458,078 controls.
Results: The HUNT GWAS identified a potentially novel locus for psoriasis on chromosome 10p15.1 (lead SNP rs12722495; $p = 3.17 \times 10^{-8}$) within an intron of IL2RA. The lead SNP replicated at nominal level of significance ($p = 0.032$) in UK Biobank. Meta-analyses identified 49 newly associated psoriasis susceptibility regions, six with multiple independent association signals. The susceptibility loci were amongst others enriched for functions relevant to leukocyte differentiation and activation.

Conclusions: Our results provide new insights into the genetic basis of psoriasis and future directions include identifying casual genes, cell types and pathways. We will further use genetic variants in Mendelian randomization analyses to identify and evaluate modifiable causes of psoriasis that may be targeted through preventive actions.

[PW12]
DISEASE TRAJECTORIES IN CONDYLOMA ACUMINATA – A COMPREHENSIVE NATION-WIDE ASSESSMENT OF COMORBIDITIES

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Purpose: Condyloma is associated with cancers related to human papillomavirus (HPV) infection. Yet, other comorbidities of condyloma and their temporal relation with condyloma remain scarcely investigated. The purpose of this study was to determine possible comorbidities of condyloma occurring prior to and after the condyloma diagnosis.
Methods: The retrospective cohort of the entire Danish population comprising 7.2 million individuals was followed for 24 years (1994–2018). The study used trajectory algorithms of diseases with data registered in the Danish National Patient Registry. Patients with condyloma treated in hospitals were identified using the 10th International Classification of Disease (ICD-10) code A63.0. The control group was matched by age, sex, hospital encounter, and discharge week of year.
Results: Alcohol-related diagnoses were common prior to condyloma, and tobacco-related diagnoses were common after condyloma in both men and women. Furthermore, various psychiatric disorders were common in both sexes and occurred both prior to and after the condyloma diagnosis. As expected, condyloma was associated with cervical dysplasia and HPV-related cancers. Additionally, female infertility was common after condyloma.
Conclusions: Healthcare providers should be aware of the mental health of condyloma patients and refer them to psychiatric treatment if needed. In addition, psychiatrists should be aware of sexually transmitted diseases in their patients to limit sequelae such as infertility.
Acknowledgements: The Novo Nordisk Foundation (grant agreements NNF14CC0001 and NNF17OC0027594) provided funding for this study.

[PW13]
BEDSIDE DIFFERENTIATION BETWEEN BENIGN AND MALIGNANT PIGMENTED SKIN TUMOURS BY FOUR DIAGNOSTIC IMAGING TECHNOLOGIES – A PILOT STUDY

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Purpose: Pigmented tumours can be difficult to diagnose. Typically, surgical excision is recommended for suspicious lesions, but novel advanced skin imaging technologies create opportunities for image-guided diagnosis of skin cancer. In this pilot study, four skin imaging technologies are combined bedside in one session.
Methods: We evaluate the ability of optical coherence tomography (OCT), reflectance confocal microscopy (RCM), photoacoustic imaging (PAI) (Provided by iThera) and high-frequency ultrasound (HFUS) to differentiate malignant from benign skin lesions. A total of 41 pigmented skin tumours were scanned prior to excision. Morphologic features and blood vessel characteristics were analysed in RCM, OCT, HFUS and PAI images and diagnostic accuracy assessed.
Results: Three novel PAI features, seven RCM features and two OCT features were detected with a high correlation to malignancy, diagnostic accuracy > 71%. No significant features were found in HFUS.
Conclusions: OCT, RCM and PAI enables image-guided evaluation of suspicious pigmented skin tumours at the bedside. Significant diagnostic accuracies for each device were demonstrated. PAI has not introduced in Denmark previously and was found clinically useful. Advanced imaging technologies combined may assist in presurgical diagnosis of suspicious pigmented lesions and decrease time delay from diagnosis to treatment.
Acknowledgement: Equipment funded by Vissing foundation, Innovation Fund Denmark and Alex Muusfeldt. Article is accepted for publishing in Acta Dermato-Venerologica. We will start study 2 (“Fast track diagnosis of malignant melanoma by two advanced imaging technologies and tumour tape-stripping of RNA and lipids”) in February and would be glad to present novel results at the congress.

[PW14]
HOW TO WASH SOCKS: DISINFECTION TRIALS WITH TERBINAFINE-SUSCEPTIBLE AND -RESISTANT DERMATOPHYTES

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Purpose: The aim of this study was to find an effective disinfection method of socks inoculated with terbinafine-resistant or terbinafine-susceptible isolates of *Trichophyton* spp., respectively.
Methods: Sock pieces were inoculated with seven terbinafine-resistant isolates of *Trichophyton* spp. with known mutations in the Squalene Epoxidase-gene (SQLE) (T. rubrum (*n*=3), *T. interdigitale* (*n*=1), and T. indotineae (*n*=3)) and six terbinafine-susceptible isolates of *Trichophyton* spp. (*T. rubrum* (*n*=3) and *T. interdigitale* (*n*=3)). Methods of disinfection included soaking in a quaternary ammonium (QAC) detergent (0.5, 2, and 24 hours), freezing at –20°C (0.5, 12, and 24 hours), domestic washing (40°C with detergent), and steam washing (40°C with detergent). Sock pieces were cultured for 4 weeks following disinfection. The primary endpoint was no growth at the end of week 4. In total, eight different fungus-disinfection procedures were experimentally evaluated on 13 isolates.
Results: Soaking in QAC-detergent for 24 hours procured a disinfectant rate of 100% (13/13), whilst soaking in 0.5 and 2 hours had a disinfectant rate of 46% (6/13) and 85% (11/13), respectively. Domestic washing (40°C with detergent) resulted in a disinfectant rate of approximately 8% (1/13). Freezing at –20°C (0.5, 12, and 24 hours) and steam washing (40°C with detergent) had no disinfectant properties.
Conclusions: Soaking socks contaminated with dermatophytes in a QAC-detergent for 24 hours effectively disinfects socks.
Acknowledgements: The authors wish to thank GRUNDIG NORDIC and Electrolux for their donation of washing machines.

Statens Serum Institute and the Department of Dermatology, Zealand University Hospital, Roskilde, Research Fund covered all other expenses.

[PW15]
FAVORABLE SAFETY PROFILE OF TIRBANIBULIN 1% OINTMENT FOR ACTINIC KERATOSIS: POOLED RESULTS FROM TWO PHASE 3 STUDIES

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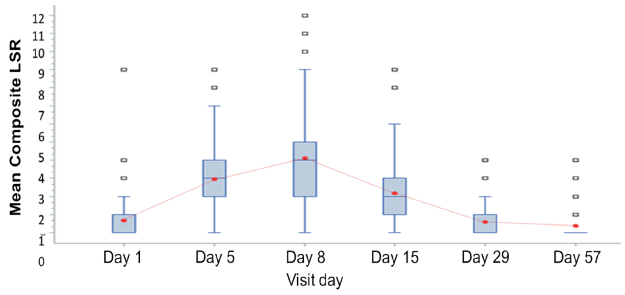
Purpose: To report tirbanibulin pooled safety data from two pivotal Phase 3, randomized, double-blinded, vehicle-controlled, parallel-group studies in patients with actinic keratosis (AK) of face or scalp.
Methods: Eligible patients (4–8 clinically visible AK lesions in a 25 cm^2 area) were randomized 1:1 to tirbanibulin 1% ointment (n=353) or vehicle (n=349) (once-daily self-application for 5 days). Safety was assessed up to Day (D) 57 through adverse events (AEs) and local skin reactions (LSRs: erythema, flaking/scaling, crusting, swelling, vesiculation/pustulation, erosion/ulceration). For each patient-visit, LSRs were scored 0–3 [absent-severe] each and summed to a composite score (0–18). Patient scores were averaged for each visit.
Results: Treatment compliance: >99%. There were no differences in treatment-related AEs (TEAEs) according to age/gender/baseline AK lesions. Overall incidence of TEAEs (tirbanibulin/vehicle) was slightly higher after face (17%/11%) vs. scalp (13%/7%) treatment. Tirbanibulin/vehicle patients experiencing ≥1 TEAE were few (16%/10%); mostly had transient mild-to-moderate application site pain and pruritus not requiring treatment. No tirbanibulin-related deaths, discontinuations or serious AEs occurred. Incidence and severity of LSRs greater than baseline was higher with tirbanibulin vs. vehicle. LSRs occurring most commonly with tirbanibulin were mild/moderate erythema (22%/63%), flaking/scaling (26%/47%), mild crusting (30%) and mild swelling (29%). The mean composite LSR score with tirbanibulin peaked by D8, decreased significantly by D15, and mostly resolved by D29 (Figure); and was similar to vehicle from D29.

Figure. Composite local skin reaction (LSR) score from baseline to Day 57 (tirbanibulin, intention-to-treat population)



The length of the box represents the interquartile range (the distance between the 25th and 75th percentiles). The symbol in the box interior represents the group mean. The horizontal line in the box interior represents the group median. The upper fence is defined as the third quartile (represented by the upper edge of the box) plus 1.5 times the interquartile range (IQR). The lower fence is defined as the first quartile (represented by the lower edge of the box) minus 1.5 times the interquartile range. Observations outside the fences are identified as outliers.

Conclusions: Pooled data from Phase 3 studies showed a favorable safety and tolerability profile for tirbanibulin 1% ointment in the treatment of AK of face or scalp.

[PW16]
CLINICAL MANIFESTATIONS AND COMORBIDITIES OF PEMPHIGUS: A RETROSPECTIVE CASE-CONTROL STUDY IN SOUTHERN FINLAND

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Purpose: Pemphigus is associated with several autoimmune, neurological, dermatological, and psychiatric comorbidities. The relative frequency of the different subtypes varies globally and the superficial subtypes pemphigus foliaceus and erythematosus have been reported to be the most common in Finland. We investigated the comorbidities associated with pemphigus in this case-control study.
Methods: We retrospectively assessed the clinical presentation and comorbidities of 66 patients treated for pemphigus in Helsinki University Hospital between 2008 and 2019 and, with an age-matched control group, performed a comparison of the studied comorbidities.
Results: The patients displayed a mean age of 57.4 years (range 23–93 years) and 56% were male. Most patients presented with cutaneous or mucosal ulcerations (65%), blistering (59%), or crusted lesions (55%) and 50% reported itch. Pemphigus vulgaris occurred most frequently (41%) followed by pemphigus foliaceus (30%) and erythematosus (15%). A history of malignancy and atopic dermatitis were statistically significantly more frequent among pemphigus patients (21% and 8%, respectively).
Conclusions: We found an increased prevalence of atopic dermatitis and a history of malignancy among pemphigus patients. Additionally, we report a high relative frequency of the superficial subtypes of pemphigus and a clinical presentation of pruritic lesions. This finding is supported by recent studies reporting a frequent occurrence of pruritus in the superficial pemphigus subtypes.
Acknowledgements: The Inflammatory Center of Helsinki University Hospital, the Finnish Dermatology Association and Finska Läkaresällskapet.

POSTERS

[P17]
TNF-ALPHA INHIBITOR TREATMENT OF ACNE FULMINANS

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Purpose: Acne fulminans (AF) is a serious, long-lasting, mutilating skin disease. The standard combination treatment comprising isotretinoin and long-term prednisolone has a well-known risk of side effects. Since AF is rare, it is difficult to perform randomized controlled trials, yet there is a need for improved treatments. Case reports of anti-TNF-alpha-therapy for AF are emerging. The purpose of this study was to gather knowledge from clinical and literature cases of AF treated with TNF-alpha inhibitors.
Methods: From 2017 to 2020, clinical cases were gathered from two dermatological centers and compared to reviewed literature cases of AF treated with TNF-alpha inhibitors.
Results: In total, 3 clinical and 11 literature cases were found. Adalimumab was the most frequently prescribed of the five identified TNF-alpha inhibitors. After one month, a positive response was observed in 2 out of 3 (67%) clinical cases and 5 out of 11 (45%) literature cases. After median 3–7 months, treatment was considered successful in 2 out of 3 (67%) clinical cases and 10 out of 11 (91%) literature cases. Reported adverse effects were mild and reversible.
Conclusions: TNF-alpha inhibitors may provide early improvement in patients with AF when standard combination therapy with isotretinoin and prednisolone fails. However, optimal implementation in the clinical setting must be explored further.

[P18]
THE ABILITY TO PREDICT MELANOMA WITHIN FIVE YEARS USING REGISTRY DATA AND A CONVOLUTIONAL NEURAL NETWORK

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Purpose: Use of machine learning (ML) algorithms on electronic health records have made significant improvements for risk predictions in clinical practice. The aim with this pilot study was to investigate how accurately a convolutional neural network (CNN) trained on Swedish registry data could perform in predicting cutaneous invasive and in situ melanoma (CMM) within five years.
Methods: Patients from a previous research project were used and included 1,208,393 individuals. Registry data ranged from 2005–2011, predicting CMM between, 2012–2016.
Results: A CNN with one-dimensional convolutions with respect to time was trained using health care databases and registers. The algorithm was trained on 23,886 individuals. The validation was performed on a holdout validation including 6,000 individuals. After training and validation, the CNN was evaluated on a test set (1,000 individuals with an occurring CMM within five years and 5,000 without). The area under the receiver operating characteristic (ROC) curve was 0.59 (95% confidence interval [CI], 0.57–0.61). The point on the ROC curve where sensitivity equaled specificity had a value of 56% (sensitivity 95% CI, 53–60% and specificity 95% CI, 55–58%).
Conclusions: This pilot investigation demonstrates potential usefulness for ML algorithms used for predicting melanoma risk. Inclusion of the complete Swedish adult population, further development, algorithm refinement and comparison between other ML modalities other than CNNs will be important next steps.
The study was financed by grants from the Swedish state under the agreement between the Swedish Government and the county councils, the ALF-agreement (ALFGBG-965546).

[P19]
EXPERIENCES REGARDING USE AND IMPLEMENTATION OF AI-SUPPORTED FOLLOW-UP OF ATYPICAL MOLES AT A DERMATOLOGICAL OUT-PATIENT CLINIC; A QUALITATIVE STUDY

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Purpose: Artificial intelligence (AI) is increasingly employed in numerous medical fields, including dermatology. Few qualitative studies have been conducted on the implementation of AI-supported procedures in dermatology. Therefore, the purpose of this study was to investigate how healthcare providers experienced the use and implementation of an AI-powered skin imaging device1, in particular its Total Body Dermoscopy(TBD)-function. In this way, the study aimed to elucidate potential barriers to the application of such new technology.
Methods: A thematic analysis, based on two focus-group interviews with 14 doctors and nurses regularly working in an outpatient pigmented lesions clinic, was conducted.
Results: First, several organizational matters were revealed to be a barrier to consistent usage of the AI-powered TBD-function, namely lack of guidance, time pressure and insufficient training. Second, the study found the perceived benefits of TBD to be the ability to better discover and monitor subtle lesion changes, as well as an unbiased procedure. Imprecise identification of moles, inability to photograph certain areas, and substandard technical aspects, were among the perceived weaknesses.
Lastly, the study found that clinicians were open to utilize AI-powered technology and that TBD was regarded as a supplementary tool to aid the medical staff, rather than a replacement of the clinician.
Conclusions: To ensure optimized application of an AI-supported diagnostic tool, a strategy for implementation should exist. This qualitative study identified areas which could be improved when implementing AI-powered technology, as well as providing insight on how medical staff anticipated and experienced the usage of AI-supported devices in dermatology.

[P20]
AI VERSUS HISTOPATHOLOGY IN DIAGNOSING SKIN CANCER

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Purpose: Skin cancer incidence rates keeps increasing. Convolutional neural networks (CNN) have proven to accurately diagnose skin cancer. The aim of this validation study was to establish the

usefulness of an artificial intelligence algorithm in diagnosing various skin cancers in a clinical setting. Specifically, the objectives where: To determine the diagnostic accuracy of an CNN compared to histopathology and to identify and classify cases of disagreement and in case of disagreement get a reassessment diagnosis from an experienced dermatopathologist.
Methods: A prospective study was performed from March 3rd to July 6th, 2021. Patients with one or more suspicious skin lesions, scheduled for surgical excision at The Department of Dermatology and Allergy Centre, Odense University Hospital were asked before surgery to join the study and sign informed consent. The diagnosis given by our CNN was compared to the histopathology diagnosis of the cases included in the study. In cases of disagreement a reassessment diagnosis was performed by two senior dermatopathologists.
Results: 218 cases from 156 patients were included in this study, 98 malignant and 120 benign. CNN achieved the following sensitivities and specificities with corresponding 95 % confidence estimates: All malignant 79.2% (69.7–86.8), 92.5% (86.2–96.5). Melanoma 52.4% (29.8–74.3), 94.9% (90.8–97.6). Basal cell carcinoma (BCC) 78.9% (66.1–88.6), 98.7% (95.5–99.6). Squamous cell carcinoma 16.7% (2.1–48.4), 96.1% (92.4–98.3). Actinic keratosis 33.3% (4.3–77.1), 97.6% (94.5–99.2).
Conclusions: Our CNN did not diagnose at the level of pathologists but showed respectable results in diagnosing BCC and in all malignant cases.

[P21]
LEBRIKIZUMAB IMPROVES ATOPIC DERMATITS SIGNS IN HEAD-AND-NECK AREA

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Purpose: Post-hoc analysis to evaluate the lebrikizumab efficacy in atopic dermatitis (AD) on the head-and-neck (H&N) area.
Methods: Adults with moderate-to-severe AD (Eczema Area Severity Index [EASI]≥16, Investigator's Global Assessment (IGA)≥3, ≥10% Body Surface Area affected, AD for ≥1 year) were randomised (3:3:3:2) to lebrikizumab 125mg every 4 weeks (Q4W; 250mg loading dose [LD]), 250mg Q4W (500mg LD), 250mg Q2W (500mg LD at Baseline/week2), or placebo Q2W for 16W. This post-hoc analysis focuses on 250mg lebrikizumab Q2W (dose which has progressed to phase 3) and placebo. Last-observation-carried-forward (LOCF) was used for imputing missing data. An ANCOVA model was performed.
Results: 85.7% of patients had H&N involvement, 88% in 250mg lebrikizumab Q2W and 88% in placebo. Mean(SD) H&N EASI %CFB at Week 16 was –65.6(40.4) in 250mg Q2W vs –35.2(42.7) in placebo. Mean percent change from baseline (%CFB) at W16 for each EASI sign and area affected in H&N are shown in the table. Significant improvement was observed for 250mg Q2W vs. placebo at W16 for all signs and area affected score.

	250mg Q2W Mean(SD) %CFB	Placebo Mean(SD) %CFB
Erythema	–51.4 (43.8)	–18.2 (31.8)
Edema	–55.8 (43.0)	–17.1 (44.7)
Excoriation	–68.8 (45.4)	–13.0 (52.3)
Lichenification	–49.0 (53.9)	–15.8 (45.9)
Area affected Score	–42.6 (48.3)	–13.9 (34.3)

SD, standard deviation.

Conclusions: Lebrikizumab showed significant improvement in all EASI signs in H&N, a burdensome and difficult to treat area. Excoriation was the EASI sign improving sooner, consistent with the early pruritus response reported in the phase 2b study.
Acknowledgments: Study funded by Dermira.

[P22]
LEBRIKIZUMAB IMPROVES CLINICAL MANIFESTATIONS AND PATIENT-REPORTED OUTCOMES IN MODERATE-TO-SEVERE ATOPIC DERMATITIS: PHASE 2B STUDY RESULTS

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Purpose: To assess the efficacy/safety of lebrikizumab and its impact on patient-reported outcomes (PRO) in moderate-to-severe atopic dermatitis (AD) in a Phase 2b study (NCT03443024).
Methods: Adult patients (Eczema Area and Severity Index [EASI]≥16, Investigator's Global Assessment [IGA]≥3, Body Surface Area [BSA]≥10%, AD for ≥1 year) were randomized 3:3:3:2 (lebrikizumab 125mg every 4 weeks [Q4W; 250mg loading dose (LD)], lebrikizumab 250mg Q4W [500mg LD], lebrikizumab 250mg Q2W [500mg LD at Baseline/W2] or placebo [PBO]) for 16W. Primary endpoint: EASI percent change from Baseline (%cfB). PRO: pruritus numeric rating scale (NRS; %cfB, ≥4-point improvement), sleep-loss NRS (%cfB), Patient Oriented Eczema Measure (POEM; cfB), Dermatology Life Quality Index (DLQI; cfB), and Hospital Anxiety and Depression Scale (HADS; cfB).
Results: At W16, a significant and dose-dependent improvement in mean EASI %cfB in lebrikizumab-groups (125mg Q4W [–62.3%], 250mg Q4W [–69.2%], 250mg Q2W [72.1%] vs PBO [41.1%]) was observed. A greater proportion of lebrikizumab vs PBO patients achieved EASI50/75/90 and IGA 0/1. Improvements in pruritus %cfB in lebrikizumab-groups vs PBO (36.9[$p<0.01$]/48.6[$p<0.001$]/61.8[$p<0.0001$] vs. 6.8) were also reported. Lebrikizumab showed greater improvements in POEM/DLQI/HADS and Sleep-loss reduction vs PBO. Treatment Emergent Adverse Events were reported in 57.5%, 48.8%, 61.3% vs 46.2% of patients; mostly mild/moderate, not leading to study discontinuation.
Conclusions: All lebrikizumab-groups met the primary endpoint. Lebrikizumab showed a dose-dependent response across all endpoints and improved key AD disease severity scores and PRO (including pruritus and sleep-loss). Lebrikizumab also suggests a reduction in anxiety and depression, with a favorable safety profile.
Acknowledgments: Study funded by Dermira.

[P23]

DUPILUMAB MONOTHERAPY PROVIDES 1-YEAR SUSTAINED RESPONSE AND REDUCES NEED FOR CONCOMITANT TOPICAL STEROIDS IN ADULTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS OPTIMALLY RESPONDING AT WEEK 16

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Purpose: To report the use of topical corticosteroids (TCS) over 52 weeks in patients treated with dupilumab who enrolled in the SOLO-CONTINUE study (NCT02395133).
Methods: Adults with moderate-to-severe atopic dermatitis who had previously participated in SOLO1/2 (NCT02277743/NCT02277769) and had achieved a 75% reduction from baseline in Eczema Area and Severity Index and/or an Investigator's Global Assessment score of 0/1 at Week 16 were enrolled into SOLO-CONTINUE. At SOLO-CONTINUE baseline (Week 16 of SOLO1/2), optimally responding patients were randomized to either continue dupilumab 300mg every 2 weeks (q2w) monotherapy (n=80) or switch from dupilumab to placebo (n=82) for an additional 36 weeks. Any potency TCS use was considered rescue treatment, and patient considered non-responder.
Results: At Week 52, only 10% of patients treated with dupilumab monotherapy required TCS rescue treatment compared with 33% of patients switching to placebo at Week 16 (P=0.0013). Patients applying TCS while using dupilumab had a mean (SD) use of 0.7 (2.1) days/week, 3 times less than placebo patients who used TCS (2.1 [3.2]). In the small percentage of patients treated with dupilumab who used TCS, most used low-to-moderate potency steroids. Dupilumab was generally well tolerated with an acceptable safety profile.
Conclusions: Most patients (90%) who achieved optimal response with 16 weeks of dupilumab q2w remained TCS-free over 36 additional weeks of dupilumab monotherapy treatment.
Acknowledgments: Research sponsor: Sanofi and Regeneron Pharmaceuticals, Inc. ClinicalTrials.gov: NCT02395133. Medical writing/editorial assistance: Nigel De Melo, of Excerpta Medica, funded by Sanofi Genzyme and Regeneron Pharmaceuticals, Inc., per Good Publication Practice guideline.

[P24]

A NORTHERN EUROPEAN DELPHI CONSENSUS ON THE SYSTEMIC TREATMENT OF ATOPIC DERMATITIS IN CHILDREN AND ADOLESCENTS AGED 2 AND OVER

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Purpose: To supplement existing guidelines on systemic therapies for moderate-to-severe paediatric atopic dermatitis (AD) by providing practical consensus recommendations supporting clinical decision-making.
Methods: A Delphi approach (two online surveys plus final meeting) was used to build consensus. It involved 19 physicians (dermatologists, paediatricians, paediatric allergists) from Belgium, Denmark, Finland, the Netherlands, Norway and Sweden with expertise in managing childhood AD. Statements were drafted and responses to them were collected using a 9-point Likert scale. (1="Strongly disagree"; 9="Strongly agree"). Consensus was reached if 75% of responses scored 7, 8 or 9. The Delphi was conducted between April and June 2021. At this time, systemic medications available for paediatric moderate-to-severe AD were azathioprine, cyclosporin A, dupilumab, methotrexate, mycophenolate mofetil, and oral glucocorticosteroids.
Results: Full or partial consensus was reached on 37 statements. The experts recommend systemic therapy for children aged ≥2 years with a clear clinical diagnosis of severe AD and persistent disease uncontrolled after optimising non-systemic treatments. The recommendations include advice on when systemic therapy should be considered if these criteria are met.
Systemic treatment should achieve long-term disease control and reduce short-term interventions and rescue medication. Recommended are cyclosporine A for short-term use (all ages) and dupilumab and/or methotrexate for long-term use (ages ≥6 years). Consensus was not reached on the best long-term systemics for children aged 2–6 years, although methotrexate and dupilumab were favoured.
Conclusions: This consensus provides practical advice to aid clinical decision-making, is aligned to guidelines, and may be relevant more widely than just Northern Europe.

[P25]

POOLED ANALYSIS OF BARICITINIB TOLERABILITY IN PATIENTS WITH ATOPIC DERMATITIS IN RELATION TO ACNE, HEADACHE, AND GASTROINTESTINAL EVENTS FROM 8 CLINICAL TRIALS

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Purpose: We report pooled safety data of specific tolerability outcomes including acne, headache, and gastrointestinal events for baricitinib (JAK1/JAK2 inhibitor) in patients with moderate-to-severe AD in the clinical development program.
Methods: We included patient-level safety data from 6 double-blinded, randomized, placebo-controlled studies, 1 double-blinded, randomized long-term-extension (LTE) study, and 1 open-label LTE study; reporting outcomes in 3 sets: placebo-controlled, 2-mg–4-mg extended, all-BARI-AD. Tolerability outcomes included TEAEs acne, headache, and gastrointestinal events (diarrhea, nausea, vomiting, constipation, abdominal pain). The proportion of patients with events and adjusted incidence rates (IR)/100patient-years at risk, adjusted severity percentage, and median onset and duration of events were calculated.
Results: 2531 patients were given baricitinib (2247patient-years). Most events were mild-to-moderate in severity; abdominal pain (n=2) and abdominal pain upper (n=2) were severe during the placebo-controlled period of any treatment group. Headache had the highest IR: 21.4 (first 16weeks)–7.6 (all-BARI-AD), occurring

14–26days (median) after first dose, lasting ≤2days in any group. Acne IRs:<5, lasting up to 90days; no events were severe. Diarrhea was the most common gastrointestinal event, lasting ≤7days, with only 2 severe events, both in all-BARI. In all-BARI, there were few study drug interruptions (headache [*n*=4], vomiting [*n*=1], abdominal pain [*n*=1]) and few permanent discontinuations (headache [*n*=2], nausea [*n*=1], abdominal pain [*n*=2]).
Conclusions: For events analyzed, baricitinib appears to be well tolerated. Based on the baricitinib safety data, headache, nausea, abdominal pain, and acne are considered adverse drug reactions, few leading to temporary/permanent discontinuation of drug in patients being treated for moderate-to-severe AD.
Presented:EADV2021.
Funding: Lilly.

[P26]
LONG-TERM DUPILUMAB EFFICACY IS SUSTAINED IN ADULTS WITH MODERATE-TO-SEVERE ATOPIC DERMITITIS TRANSITIONING FROM WEEKLY TO EVERY OTHER WEEK DOSING: RESULTS FROM AN OPEN-LABEL EXTENSION TRIAL

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Purpose: We assessed long-term maintenance of dupilumab efficacy in adults with moderate-to-severe atopic dermatitis (AD) transitioning weekly (qw) to every other week (q2w) dosing in an open-label extension (OLE) trial (NCT01949311).
Methods: Adults with moderate-to-severe AD who participated in any dupilumab parent study were enrolled (initial duration of 3 and up to 5 years). In 2019, patients transitioned from 300mg dupilumab qw to the approved 300mg q2w dosage.
Results: Patients that transitioned from qw to q2w (*n*=226) had an initial exposure duration of ≥3 years to qw. 222 (98%) patients received q2w dosing for 24–75 weeks (exposure mean [SD]: 46.7 [7.4]; median: 48.5). Mean (SD) Eczema Area and Severity Index (EASI) and Pruritus Numerical Rating Scale (NRS) score in transitioning patients remained stable from transition (EASI: 1.92 [3.5], NRS: 2.15 [1.8]) to 48 weeks post-transition (EASI: 1.93 [4.5], NRS: 2.24 [1.9]). >80% of patients who achieved EASI≤7 or NRS≤4 at transition continuously maintained their response for 24 weeks after transition. Dupilumab was generally well tolerated, with an acceptable safety profile in the overall population.
Conclusions: In this long-term OLE study, dupilumab efficacy was sustained following transition from 300mg qw to the approved 300mg q2w regimen, with stable signs and symptoms 48 weeks post-change.
Acknowledgements: Data first presented at Revolutionizing Atopic Dermatitis Virtual Conference (RAD); Dec 11–13, 2021. Research sponsor: Sanofi and Regeneron Pharmaceuticals, Inc. ClinicalTrials.gov: NCT01949311. Medical writing/editorial assistance: Nigel De Melo, PhD, of Excerpta Medica, funded by Sanofi Genzyme and Regeneron Pharmaceuticals, Inc., per Good Publication Practice guideline.

[P27]
DUPILUMAB PROVIDES LONG-TERM EFFICACY FOR UP TO 4 YEARS IN AN OPEN-LABEL EXTENSION STUDY OF ADULTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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Purpose: This analysis presents long-term efficacy of dupilumab up to 4 years in moderate-to-severe atopic dermatitis (AD) patients from an open-label extension study (NCT01949311).
Methods: Adults with moderate-to-severe AD from any dupilumab parent study were enrolled (initial duration of 3 and up to 5 years). Patients received 300mg dupilumab weekly and transitioned to the approved 300mg every 2 weeks dose in 2019. Concomitant topical anti-inflammatory treatments were permitted. Data shown are for the overall study population (*N*=2,677).
Results: 2,207/1,065/557/362/352/240 patients completed up to 52/100/148/172/204/>204 weeks of treatment. 59.5% of withdrawals were due to dupilumab approval; 8.4% due to adverse events (AEs); 4.3% due to lack of efficacy. Relative to the parent study baseline, 91% of patients achieved a 75% reduction in Eczema Area and Severity Index (EASI), 76% achieved a 90% reduction in EASI and 70.8% achieved a ≥4-point reduction in the Peak Pruritus Numerical Rating Scale score at Week 204. 2273 (84.9%) patients reported treatment-emergent AEs, and 99 (3.7%) patients discontinued treatment permanently due to AEs. Dupilumab was generally well tolerated with an acceptable safety profile.
Conclusions: Long-term dupilumab treatment showed sustained efficacy with improvements in AD signs and symptoms in adults with moderate-to-severe AD up to 204 weeks.
Acknowledgements; *Please note Mette Deleuran is presenting on behalf of the original authors. Data first presented at Revolutionizing Atopic Dermatitis Virtual Conference (RAD); Dec 11–13, 2021. Research sponsor: Sanofi and Regeneron Pharmaceuticals, Inc. ClinicalTrials.gov: NCT01949311. Medical writing/editorial assistance: Nigel De Melo, PhD, of Excerpta Medica, funded by Sanofi Genzyme and Regeneron Pharmaceuticals, Inc., per Good Publication Practice guideline.

[P28]
LONG-TERM SAFETY DATA FOR DUPILUMAB UP TO 4 YEARS IN AN OPEN-LABEL EXTENSION STUDY OF ADULTS WITH MODERATE-TO-SEVERE ATOPIC DERMATITIS

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Purpose: This analysis extends the dupilumab safety profile in moderate-to-severe atopic dermatitis (AD) patients from an open-label (OLE) extension study (NCT01949311) to 204 weeks.

Methods: Adults with moderate-to-severe AD who participated in any dupilumab parent study were enrolled (initial duration of 3 and up to 5 years). Following protocol amendments in 2017/2018, 114/272 patients re-entered the trial, and 103/207 patients had treatment interruption >8 weeks. Patients received 300mg dupilumab weekly and transitioned to the approved 300mg every 2 weeks dose in 2019. Concomitant topical treatments were permitted. Data shown for the overall study population (N=2,677).
Results: 2,207/1,065/557/362/352/240 patients completed 52/100/148/172/204/>204 weeks of treatment. 59.5% of withdrawals were due to dupilumab approval; 8.4% due to adverse events (AEs); 4.3% due to lack of efficacy. Exposure-adjusted incidence rates of treatment-emergent AEs (TEAEs) were lower vs 300mg qw+TCS arm of CHRONOS (167.5 vs 322.4 nP/100PY). 10.4% of patients had ≥1 serious TEAEs; 9.8%, ≥1 severe TEAEs; 1.2%, ≥1 serious TEAE related to study drug; 3.7%, ≥1 TEAEs resulting in treatment discontinuation. Most common TEAEs were nasopharyngitis (28.9%) and conjunctivitis (20.0%).
Conclusions: This OLE study in adults with moderate-to-severe AD extends the reported dupilumab safety profile to 4 years.
Acknowledgments: Data first presented at Revolutionizing Atopic Dermatitis Virtual Conference (RAD); Dec 11–13, 2021. Research sponsor: Sanofi and Regeneron Pharmaceuticals, Inc. ClinicalTrials.gov Identifier:NCT01949311/NCT02260986. Medical writing/editorial assistance: Nigel De Melo, PhD, of Excerpta Medica, funded by Sanofi Genzyme and Regeneron Pharmaceuticals, Inc., per Good Publication Practice guideline.

[P29]
ASSOCIATION BETWEEN ATOPIC DERMATITIS, COGNITIVE FUNCTION AND SCHOOL PERFORMANCE IN CHILDREN AND YOUNG ADULTS

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Purpose: To examine the association between hospital-managed atopic dermatitis (AD), school performance, and intelligence quotient (IQ).
Methods: Via linkage of nationwide registers, we identified three populations between 2001 and 2019: I) children (n=770,611) graduating lower secondary school, II) young adults (n=394,193) with an upper secondary graduation mean, and III) conscripts (n=366,182) with an IQ test score registered. AD was defined as an ICD-10 L20 hospital diagnostic code and was classified according to prescription data into mild (default), moderate (potent TCS or tacrolimus 0.1%) and severe (very potent TCS or systemic immunosuppressants). Outcomes included graduation mean, need for special educational assistance and IQ test score.
Results: In lower secondary school, children with severe AD scored a significantly lower graduation mean than children with mild AD ([diff –0.285; 95%CI –0.45 to –0.13; p=0.0005], [diff –0.257; 95%CI –0.42 to –0.10; p=0.0016] and [diff –0.230; 95%CI –0.40 to –0.06; p=0.0098], for overall, written, and oral mean, respectively). Children with AD had higher odds of receiving special educational assistance (OR 1.18; 95%CI 1.05–1.33; p=0.005) than children without AD. In upper secondary school, adolescents with AD scored a graduation mean similar to their non-AD peers. Conscripts with AD had a significantly lower mean IQ than non-AD conscripts (diff –0.596; 95%CI –0.87 to –0.32; p<0.0001). Absolute differences were small.
Conclusions: AD and especially severe AD is associated with worse school and cognitive performance in childhood and adolescence, which could interfere with academic achievements in life.
Acknowledgements: The study was sponsored by Sanofi and Regeneron Pharmaceuticals.

[P30]
EFFECTS OF PHOTOTHERAPY ON FREE VITAMIN D LEVELS IN PATIENTS WITH ATOPIC DERMATITIS

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Background: The role of vitamin D in atopic dermatitis (AD) is controversial. One explanation could be the use of an inadequate marker for assessing vitamin D status. To the best of our knowledge, there are no published data on directly measured free 25(OH)D levels in AD patients.
Methods: Ten individuals (>18 years) with moderate to severe AD were treated with narrow band ultraviolet light B (NB-UVB) for 10–12 weeks. Disease severity was assessed with objective SCORing atopic dermatitis (SCORAD) and visual analogue scale (VAS) before and after therapy. Total 25(OH)D, free 25(OH)D and 1,25(OH)D serum levels were analyzed before and after treatment. Free 25(OH)D concentrations were measured with a two-step immunosorbent assay (ELISA).
Results: Mean SCORAD decreased from 34.0 to 21.0 and VAS improved significantly after phototherapy. Mean delta 25(OH)D was 80 nmol/L (95% CI [49, 110]) and mean delta free 25(OH)D was 5.86 pmol/L (95% CI [2.76, 8.97]). 7/10 had sufficient levels of 25(OH)D before treatment (mean 76.4 nmol/L). Mean free 25(OH)D was 11.9 pmol/L. No correlations between disease severity and vitamin D were found. No association between 25(OH)D and free 25(OH)D was found.
Conclusions: This is the first time free 25(OH)D levels have been described in AD patients. Phototherapy significantly improved AD severity and raised both total and free 25(OH)D concentrations in AD patients. The lack of association between total and free 25(OH) implies a disturbed vitamin D pathway in AD patients that warrants further investigation.
Conflicts of interest: None declared.

[P31]
EFFECTS OF EMOLLIENT CREAMS ON THE SKIN BARRIER OF PATIENTS WITH ATOPIC DERMATITIS

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Purpose: Skin barrier dysfunction is a hallmark of Atopic Dermatitis (AD). Mutations affecting the *FLG* gene is a risk factor for AD. The aim of the study was to compare the barrier-strengthening properties of a new moisturiser, containing 2% urea and 20% glycerol (test cream), to a glycerol cream, a cream without humectants and no treatment.
Methods: A randomised controlled study in 49 adults with AD. Participants treated the lower forearms (i.e. four treatment areas) with the three products twice daily. After four weeks, all four areas were challenged with an irritant. The primary outcome was skin sensitivity to the irritant. In addition, a sub-group of patients with mutations in the FLG gene were analysed.
Results: The test cream was superior to no treatment and to the reference creams in reduction of Trans Epidermal Water Loss (TEWL) and skin redness after induction of skin irritation. There were 11 patients with *FLG* mutations. The effect size of test cream vs no treatment was almost two times greater in the mutation group compared to the wildtype group. This difference was even greater when comparing test cream to cream without humectants.
Conclusions: The study highlights that not all creams have positive influence on the skin barrier. The test cream had superior effect and whilst it was protective in all participants the effect was even greater in carriers of *FLG* mutations.
This investigator-led study was funded by Perrigo Nordic

[P33]
AN INTERPROFESSIONAL COLLABORATION IN CASE OF THE PATIENT WITH LICHEN RUBER PLANUS

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Purpose: In several cases of the patients with unclear symptoms are important find a good and efficient approach for diagnostic and treatment. Interprofessional collaboration is one of the answer patients with unclear diagnosis. (Huber, 2022)
Methods: The medical documentation, pathology slides and data of laboratory results were reviewed in the context of medical literature.
Results: A 61-year-old white man presents with referred to the dermatologist from a rheumatologist with an unclear atrophic lesion on the left forearm. The patient has several times per year severe conjunctivitis with unclear origins.
In objective examination of the overall status – without any deviation of the norm. In the local status, found atrophic, hyperaemic macular lesion on the left forearm with well demarcated. The blood test result (included blood autoimmunity parameters) and skin punch biopsy were done. The blood test result, blood autoimmunity parameters, total IgE showed without any deviation of the norm. At the pathophysiological conclusion said that: morphological finding conforms lichen ruber planus.
Conclusions: Lichen ruber planus is a common skin disease, however, conjuctival inflammation at all and as a begining of this disease is rare (Pakravan et al., 2006). In some cases, unimportant to the patient lesion can help other specialist make a correct diagnosis. An interprofessional collaboration of the various specialities in different medical fields is benefitted for patient and promote patient – centered care.

[P34]
RISK FACTORS FOR COMLICATED MOHS SURGERY IN THE SOUTH SWEDEN MOHS COHORT

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Purpose: Mohs micrographic surgery (MMS) is a precise, tissue-sparing surgical technique that offers superior cure rates compared to traditional surgical excision. However, the degree of difficulty of MMS depends on many variables and, consequently, the number of stages required for each case is quite unpredictable.
The study aimed to identify risk factors for complicated MMS, defined as MMS in ≥3 stages.
Methods: In a cohort study design, data was prospectively collected on 612 patients that underwent MMS for basal cell carcinoma (BCC) at the Department of Dermatology, Skåne University Hospital, Lund, between 2009 and 2020. Univariate and multivariate logistic regression were used to estimate risk of ≥3 MMS stages. Due to risk of multicollinearity between recurrent BCC and previous surgeries, a partly and a fully adjusted multivariate logistic regression model were constructed.
Results In fully adjusted multivariate analyses, age, previous cryotherapy (odds ratio (OR) 2.2; confidence interval (CI) 95% 1.2–3.8) and >1 previous surgery (OR 3.2; CI 95% 1.9–5.5) were significantly associated with risk of complicated MMS. Recurrent BCC was associated with risk of complicated MMS in partly adjusted multivariate analyses, but not in the fully adjusted analyses. Gender, histopathological subtype, and tumour localisation were not associated with risk of complicated MMS.
Conclusions: Older age and tumours previously treated with cryotherapy or multiple prior surgeries increase risk of MMS in ≥3 stages. Whether recurrent BCC is an independent risk factor for complicated MMS surgery need further evaluation. Knowledge of these risk factors may ameliorate planning of Mohs surgeries.

[P35]
SKIN BARRIER FUNCTION AFTER REPEATED SHORT-TERM APPLICATION OF ALCOHOL-BASED HAND RUB FOLLOWING INTERVENTION WITH WATER IMMERSION OR OCCLUSION

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Purpose: Alcohol-based hand rub (ABHR) is recommended for hand hygiene, and application on dry skin is generally well tolerated. However, hydration of the skin may lead to increased susceptibility to ABHR. This experimental setup evaluates if increased skin hydration changes skin barrier response to ABHR, as compared to application on dry skin.
Methods: Twenty healthy volunteers participated in a 3-day experimental setup. Intervention areas on the forearms were exposed to either water immersion or occlusion followed by repeated exposures to ABHR. Skin barrier function was assessed by measurement of transepidermal water loss (TEWL), electrical conductance, pH, and erythema at baseline and day 3.
Results: The area exposed to water immersion preceding ABHR showed a significant increase in TEWL from baseline to day 3 (p=0.04), and for the occluded area the same trend was found (p=0.11), with an additional decrease in electrical conductance (p=0.03). No significant differences were found for the control area. The assessments did not differ significantly between intervention and control sites.

Conclusions: Our results indicate that extensive skin hydration may lead to increased susceptibility to ABHR. Further evaluation of this observation is important, since ABHRs are widely used, particularly among health care workers in whom hand eczema is a huge problem.
Acknowledgements: No funding to declare. Acknowledgement goes to my co-authors.

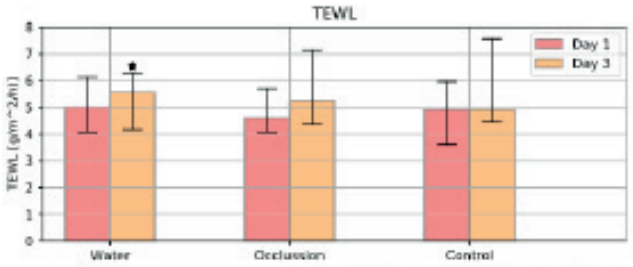

FIGURE 1 TEWL median values with 25th and 75th percentiles at day 1 and day 3 for area 1 (water immersion), 2 (occlusion), and 3 (control), respectively. *Significant changes ($P < .05$) from day 1 to day 3

[P36]
SUCCESSFUL TREATMENT OF FRONTAL FIBROSING ALOPECIA REQUIRES COMBINATION THERAPY

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Purpose: Frontal fibrosing alopecia (FFA), a relatively newly described hairloss disease with an increasing incidence, is a lymphocytic scarring alopecia affecting the temporal and frontal hairline, and sometimes the eyebrows including skin changes. Permanent hair follicular damage leading to irreplaceable hair loss may occur. There is a lack of standardized treatment protocols. The aim of this case-report is to assess and document the effect of anti-inflammatory and hair-regrowth treatment in combination. Standardized treatment protocols are scarce and poorly documented. Therefore, the aim of this case-report is to assess and document the effect of anti-inflammatory and hair-regrowth treatment in combination.
Methods: FFA was histologically verified. The patient received hair regrowth/anti-inflammatory treatment with daily topical 5% solution of minoxidil, biweekly application of topical steroid solution, and 7,5 mg/ml triamcinolone injections every six to nine weeks. Hair regrowth was qualitatively and quantitatively assessed and photo-documented at six and nine months after treatment start. The patient consented for publication of this case-report.
Results: Regrowth of hair and decrease in hair shedding was consistently observed and improved at follow-up, and maintained (see photo below). Treatment is continued on a regular basis until the disease eventually burns out.
Conclusions: Early treatment with both anti-inflammatory agents reducing autoimmune hair follicle destruction and hair re-growth agent reduced hair loss, scarring and improved hair growth. Reports on the effect of other systemic treatments (Hydroxychloroquine, Isotretinoin and Dutasteride) are available and future studies for treatment standardization are needed.

[P37]
PATIENTS WITH HIDRADENITIS SUPPURATIVA HAVE AN INCREASED RISK OF CANCER IN MULTIPLE ORGAN SYSTEMS

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Background: Hidradenitis suppurativa (HS) is a severe, chronic, inflammatory skin disease. Patients often suffer autoimmune comorbidities, unhealthy lifestyles (smoking, obesity and alcohol abuse) and disadvantageous socio-demographic profiles, all known risk factors for cancer.
Purpose: To assess overall and site-specific cancer risks amongst patients with HS.
Methods: Nationwide retrospective register-based cohort study of cancer following a diagnosis of HS. Only cancers diagnosed +1 year after HS diagnosis were included. Data on incident cancer and HS diagnoses originated from the Danish Cancer Register and the Danish National Patient Register (period 1978–2017). The outcome was the standardized Incidence Ratios (SIR), i.e., ratios between observed and expected numbers, of 71 non-overlapping types of cancer.
Results: 13,919 Danes qualified as HS patients during the study period, and a total of 1,193 incident cancers were found in this population corresponding to a 40% increased risk of cancer overall (SIR = 1.4 95% CI: 1.3–1.4). For individual organ systems, the observed cancer risks were as follows:
Respiratory system (SIR = 2.4, 95% CI: 2.1–2.7); oral cavity and pharynx (SIR= 2.3, 95% CI: 1.7–2.9); digestive organs and peritoneum (SIR = 1.6, 95% CI: 1.4–1.8); urinary tract (SIR = 1.5, 95% CI: 1.2–1.9), the lymphatic tissues (SIR = 1.5, 95% CI 1.1–1.9), and the blood forming organs (SIR = 1.4; 95% CI 1.0–1.8).
Conclusions: Patients with HS have an increased overall cancer risk reflecting increased risks of a wide variety of different cancers in different organ systems. This is important as the archetype HS patient is a young female.

[P38]
GLOBAL PREVALENCE OF HIDRADENITIS SUPPURATIVA

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Background: Wide Hidradenitis Suppurativa prevalence data have been reported based on heterogenous methodological approaches. A systematic review by Jfri et al (1) reported an overall HS prevalence of 0.40% (95% CI, 0.26%–0.63%). The wide variation in prevalence creates uncertainty. Global epidemiological data are lacking.

Objective: To determine the global prevalence of HS.
Methods: This is an explorative, cross-sectional, descriptive study based on the validated screening questionnaire created by Vinding et al (2). Healthy participants accompanying patients undergoing care in a hospital-setting will be included. Each country will include 500–1000 participants. HS screen positive and 10% of the screen negative participants will be examined clinically and the out-come verified by a physician.
Results: Twenty-one countries distributed across Australia, Europe, North and South America, Asia, and Africa have been included so far. Ghana, Greenland Singapore have finalized the data collection and report of the following prevalence data:
Ghana: 0.67%; 95% CI 0.37–1.23 (sample size 1440)
Greenland: 3.2%; 95% CI 1.6–4.7 (sample size 506)
Singapore 0.585%; 95% CI 0.118–1.053 (sample size 1054)
Conclusion: Global Hidradenitis Suppurativa prevalence data are lacking. Gathering global HS prevalence data will help bridge the existing knowledge gap on HS prevalence and serve as a basis to a more comprehensive approach to early diagnosis and treatment of patients, thus preventing the complications that may occur due to the diagnostic delay.
References:

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(2) Vinding GR, Miller IM, Zarchi K, Ibler KS, Ellervik C, Jemec GB. The prevalence of inverse recurrent suppuration: a population-based study of possible hidradenitis suppurativa. Br J Dermatol. 2014;170(4):884–9.

[P39]
PYODERMA GANGRENOSUM AND CONCOMITANT PERIPHERAL ARTERIAL DISEASE: A CASE SERIES AND LITERATURE REVIEW

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Purpose: Pyoderma gangrenosum (PG) is a neutrophilic dermatosis associated with systemic inflammatory diseases. Peripheral arterial disease (PAD) is a manifestation of atherosclerosis, which is a chronic inflammatory disease. We describe the cases of 7 patients diagnosed with both entities.
Methods: We performed a retrospective medical chart review of 7 patients with an overlap of PAD and PG and compared treatment strategies and outcomes.
Results: Four of the patients were men, mean age at PG diagnosis was 69 and diagnosis of PAD was made at a mean of 2.43 years after PG diagnosis. Three patients had a normal toe-brachial index at early stages of PG and rapidly developed severe PAD within a short period of time. All patients required treatment with multiple immunosuppressive agents. Invasive and non-invasive strategies were initiated when indicated for the treatment of PAD. 3 of the patients required bilateral femur amputation, 3 required unilateral femur amputation and 1 remitted completely.
Conclusions: 6 out of 7 patients, had a poor outcome, requiring amputation, even though adequate treatment was initiated. We propose that PAD, whether by reducing the healing potential or by partially contributing to the pathophysiology of the wounds, is a risk factor for the prognosis of PG. Furthermore, the fact that 3 of the patients developed PAD within a very short period of time after the diagnosis of PG, suggests that PG could itself be a risk factor for the development of PAD. However, more clinical data is required to adequately assess this possible relation.

[P40]
TREATMENT OF DRY, ITCHY SKIN IN ADULTS WITH A NOVEL MOISTURIZER CONTAINING HIGH LEVELS OF AMINO ACIDS

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Purpose: Amino acids derived from pro-filaggrin in the epidermis are a pivotal part of the Natural Moisturizing Factor (NMF) that are essential for normal skin hydration. Lack of amino acids in the skin may be the result of filaggrin mutations or secondary to inflammation-mediated suppression of filaggrin expression.
MC2 has formulated a novel moisturizing cream (MC2 dry skin) with a high amino acids content allowing amino acid substitution in patients with low levels of NMF. In a pilot study we have evaluated the hydration properties of the cream.
Methods: Open label, single arm study including 60 adult consecutive patients with dry skin. The most frequent diagnoses were atopic dermatitis, and hand eczema. Dryness and scaling were scored by the dermatologist on a NRS scale at Baseline, Day 7, and Day 21.
Results: The reduction in scaling and dryness during the trial was 67%. 45 patients suffered from itching and many of these had sleep disturbances. Itching and sleep disturbances were patient reported using NRS scales. During the trial, reduction in itching was 76% and improvement in sleep disturbances were 84%.
Adverse events to the cream were minor. 77% of the patients found the cream pleasant or very pleasant after application.
Conclusions: It is possible to formulate a hydrating cream capable of substituting NMF amino acids in epidermis quantitatively. The cream was very well accepted by patients and was highly effective, improving quality of life with significant effect on symptoms of dry scaling skin, itching and sleep disturbances
Funding: MC2 Therapeutics

[P41]
CLASSIFICATION OF TATTOO COMPLICATIONS BY TYPE: AN EDUCATIONAL REVIEW

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Purpose: Tattoos are increasingly popular and approximately 1/5 of Europeans of both genders and all classes of society are tattooed. Among the tattooed 1/5 experience tattoo complaints or suffer a medical tattoo reaction. Reactions can be troublesome, and patients are heavily burdened by itching, swelling, pain and sores.
Methods: The "Tattoo Clinic", at the Dermatology Department, Bispebjerg University Hospital in Denmark, is highly specialized in diagnosis and treatment of tattoo complications. More than 1000 reactions have been seen at the clinic since 2008. The different types of tattoo complications will be outlined including illustrative photos.
Results: Tattoo complications were by type; Infection, papulonodular reaction, allergic reaction, neurosensitivity reaction, light induced reaction, tattoo technical hazard (needle trauma, pigment overload, infected ink) and tattoo removal hazard (by laser, caustics, surgery). The clinic offers a range of treatments with dermatome shaving used as an effective method to remove culprit pigment from the skin.
Conclusions: Many clinicians have not been taught this new subspecialty of dermatology. Patients easily are neglected and not offered optimal treatment despite the disease burden is comparable to other cumbersome dermatological diseases.

[P42]

REDUCED PAIN AND INCREASED HEALTH-RELATED QUALITY OF LIFE FOLLOWING TREATMENT WITH THE PDE4-INHIBITOR ORISMILAST

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Background: Hidradenitis suppurativa (HS) is an inflammatory scarring skin disease characterized by nodules, abscesses, and tunnels in the axillae, groin or perianal/perigenital skin. Apremilast has shown promise in early studies. Orismilast is a next-generation peroral PDE4-inhibitor with modified release formulation being studied in an open-label phase 2A study in patients with HS. The patient reported response of the first HS patient treated for 57 days with Orismilast is reported here.
Methods: A patient with long-standing severe HS in axillae, groins and buttocks is treated with Orismilast. Orismilast was titrated from 10 mg twice daily to 30 mg twice daily in week 1 and this dose was maintained for the reminder of the trial. The patient's perception was captured using the following tools: Visual Analog Scale of pain (VAS pain), HS specific quality of life (HiSQOL) and Dermatology Life Quality Index (DLQI).
Results: The patient's perceptions were of significant clinical improvement. Compared to baseline, the structured Patient Reported Outcomes (PROs) were all reduced on day 57: VAS pain (9 vs. 6), HiSQOL (54 vs. 44), DLQI (25 vs. 22)
Conclusions: The next-generation PDE4-inhibitor Orismilast seems to be associated with less pain and improved health-related quality of life in severe HS.
Funded as an unrestricted grant by UNION therapeutics A/S, Hellerup, Denmark
Clinicaltrials.gov:NCT04982432; EudraCT:2021-000049-42

[P44]

THE ASSOCIATION BETWEEN BRAF-V600E MUTATIONS AND DEATH FROM THIN (<=1.0 MM) MELANOMA: A POPULATION-BASED NESTED CASE-CASE STUDY FROM QUEENSLAND, AUSTRALIA

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Purpose: BRAF mutations are common in cutaneous melanoma but their prognostic significance is unclear, especially for early-stage tumours. We investigated whether BRAF-V600E mutations in thin (≤1.00 mm) melanoma can predict melanoma mortality.
Methods: In this REMARK-compliant, nested case-case study, we collected data on a cohort of 27,660 people with a diagnosis of a thin (≤1.00 mm) single locally invasive melanoma between 1995 and 2014 from the population-based Queensland Cancer Registry, Australia. Within this cohort, 436 (1.6%) were fatal cases, i.e. people who had died from their melanoma. We retrieved archival tumours for 85 of these fatal cases which were randomly matched (1:1) with 85 non-fatal cases (melanoma survivors) by age, sex, year of diagnosis, follow-up interval, and tumour thickness. BRAF-V600E mutation status in the melanoma tissue was analysed with immunohistochemistry. Using conditional logistic regression, we calculated odds ratios (ORs) for melanoma-specific mortality, adjusting for anatomical location.
Results: BRAF-V600E mutations were present in 19 of 85 (22%) fatal cases and 29 of 85 (34%) non-fatal cases. People with BRAF-V600E mutations were more commonly women (52% vs. 17%) and younger (median 52 vs. 65 years) than those with wild-type tumours. Preliminary analyses show that BRAF-V600E mutations were associated with lower melanoma-specific mortality (OR 0.30, 95% CI 0.10–0.89), after adjusting for anatomical site.
Conclusions: We found BRAF-V600E mutations to be inversely associated with death from thin (≤1.00 mm) melanoma. Identification of people with potentially fatal thin melanomas would produce an opportunity to intensify follow-up post-diagnosis.

[P45]

PATIENT ABILITY TO TAKE DERMOSCOPIC FOLLOW-UP IMAGES OF ATYPICAL MELANOCYTIC LESIONS WITH SMARTPHONES

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Purpose: To investigate patients' ability to take evaluable dermoscopic images of atypical melanocytic lesions for teledermoscopic short-term monitoring.
Methods: Patients were asked to take follow-up images at home using the DermLite HÜD dermoscope and their own smartphone. To detect lesion change, baseline images from the hospital and the follow-up images taken by the patient were compared. Thereafter, the same baseline images were compared with follow-up images taken by hospital staff. Lesions were rated as either changed, un-

changed, or in need of long-term monitoring. In addition, image quality and attitudes towards taking dermoscopic follow-up images were assessed.

Results: In this preliminary report, 63 patients with 87 lesions were included. Evaluations of lesion change based on the follow-up images taken by patients and by hospital staff, were discordant in eight cases (p=0.29). Images acquired by hospital staff were of better quality (p<0.05). Moreover, approximately one-fifth of the images taken by patients were of poor quality. However, most participants found the procedure to be simple and the majority answered that they would rather take images at home and send them to the hospital than return for a physical follow-up visit.

Conclusions: Patients' attitudes were predominately positive to acquiring their own dermoscopic follow-up images and the procedure was considered easy to perform. Since a few assessments of lesion change were discordant, future studies should provide patients with more user-friendly dermoscopes with higher technical standards.

Funding: Grants from the Swedish state under the agreement between the Swedish government and the county councils, the ALF-agreement

[P46]
SAFETY OF MOGAMULIZUMAB IN MYCOSIS FUNGOIDES AND SEZARY SYNDROME: FINAL RESULTS FROM THE PHASE 3 MAVORIC STUDY

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Purpose: MAVORIC was an open-label, phase3 study evaluating safety and efficacy of mogamulizumab vs vorinostat in previously-treated mycosis fungoides/Sézary syndrome (NCT01728805). This report provides final safety results (January 3, 2019).

Methods: Patients were randomized 1:1 to mogamulizumab 1.0 mg/kg intravenously on Days 1, 8, 15, 22 of the first-cycle and Days 1 and 15 of subsequent cycles or vorinostat 400 mg orally once daily. Patients could crossover from vorinostat to mogamulizumab upon progression/intolerable toxicity.

Results: 372 patients were randomized, and 370 included for safety analysis (mogamulizumab:184; vorinostat:186). Median follow-up was 34.5 months in the randomized part of the study. Types and frequencies of adverse events (AEs) attributable to mogamulizumab (per Investigator assessment) included infusion-related reaction (33.2%[61/184]), drug eruption(23.9%[44/184]), and fatigue(18.5%[34/184]); and for vorinostat, diarrhea(55.4%[103/186]), nausea(38.2%[71/186]), and fatigue(33.3%[62/186]). In cross-over patients, the most frequently reported AEs attributable to mogamulizumab were infusion-related reaction(37.8%[51/135]), drug eruption(24.4%[33/135]), fatigue(7.4%[10/135]), increased alanine aminotransferase(7.4%[10/135]), and increased aspartate aminotransferase(7.4%[10/135]). Discontinuation rates due to AEs were: mogamulizumab(21.7%[40/184]); vorinostat(23.7%[44/186]); crossover(25.9%[35/135]). The most common AEs leading to discontinuation were drug eruption with mogamulizumab(7.1%[13/184]), and fatigue with vorinostat(4.3%[8/186]). Rates of drug-related serious treatment-emergent adverse events (TEAEs) were mogamulizumab(19.6%[36/184]); vorinostat(16.7%[31/186]); crossover(11.9%[16/135]. After data cutoff for the primary analysis, 2 patients experienced TEAEs with

Table. TEAEs Reported by ≥10% of Patients in Either Treatment Group During Randomized Treatment[a]: Results of the Final Safety Analysis

	Mogamulizumab (n=184)		Vorinostat (n=186)	
System Organ Class Preferred Term[b,c]	All Grades n (%)	Grade ≥3 n (%)	All Grades n (%)	Grade ≥3 n (%)
Gastrointestinal Disorders				
Diarrhea	48 (26.1)	1 (0.5)	115 (61.8)	9 (4.8)
Nausea	30 (16.3)	1 (0.5)	79 (42.5)	3 (1.6)
Constipation	23 (12.5)	1 (0.5)	34 (18.3)	2 (1.1)
Vomiting	13 (7.1)	0	24 (12.9)	1 (0.5)
Abdominal pain	9 (4.9)	0	22 (11.8)	0
General Disorders and Administration Site Conditions				
Fatigue	44 (23.9)	3 (1.6)	70 (37.6)	11 (5.9)
Edema peripheral	28 (15.2)	0	27 (14.5)	1 (0.5)
Pyrexia	33 (17.9)	1 (0.5)	12 (6.5)	0
Asthenia	10 (5.4)	0	28 (15.1)	4 (2.2)
Infections and Infestations				
Upper respiratory tract infection	21 (11.4)	0	10 (5.4)	2 (1.1)
Skin and Subcutaneous Tissue Disorders				
Alopecia	14 (7.6)	0	36 (19.4)	0
Drug eruption	46 (25.0)	9 (4.9)	2 (1.1)	0
Nervous System Disorders				
Dysgeusia	8 (4.3)	0	55 (29.6)	1 (0.5)
Headache	25 (13.6)	0	29 (15.6)	1 (0.5)
Dizziness	12 (6.5)	0	19 (10.2)	0
Investigations				
Blood creatinine increased	6 (3.3)	0	52 (28.0)	0
Weight decreased	11 (6.0)	1 (0.5)	33 (17.7)	3 (1.6)
Platelet count decreased	4 (2.2)	0	19 (10.2)	0
Metabolism and Nutrition Disorders				
Decreased appetite	16 (8.7)	2 (1.1)	46 (24.7)	2 (1.1)
Musculoskeletal and Connective Tissue Disorders				
Muscle spasm	10 (5.4)	0	29 (15.6)	2 (1.1)
Blood and Lymphatic System Disorders				
Thrombocytopenia	22 (12.0)	0	58 (31.2)	13 (7.0)
Anemia	21 (11.4)	2 (1.1)	20 (10.8)	3 (1.6)
Injury, Poisoning, and Procedural Complications				
Infusion-related reaction	61 (33.2)	3 (1.6)	1 (0.5)[d]	0
Respiratory, Thoracic, and Mediastinal Disorders				
Cough	20 (10.9)	0	16 (8.6)	0
Vascular Disorders				
Hypertension	18 (9.8)	9 (4.9)	25 (13.4)	12 (6.5)

Abbreviations: AE = adverse event; CTCL = cutaneous T-cell lymphoma; TEAE = treatment-emergent adverse event.

[a] Defined as AEs that occurred from the first dose of randomized study drug through 90 days after the last dose of randomized study drug or the start of alternative CTCL therapy, whichever occurred first; AEs considered related to study drug that occurred >90 days after the last dose of randomized study drug were also counted as TEAEs during the randomized treatment period.

[b] MedDRA Version 15.1 was used for coding.

[c] The protocol was amended on 31May2018 to require only collection of study drug-related AEs/serious AEs and implemented at individual sites upon institutional review board/ethics committee approval.

[d] One patient had an infusion reaction on Day 1 of crossover to mogamulizumab treatment (17 days after the last dose of vorinostat) that was indicated as possibly related to vorinostat (and mogamulizumab).

an outcome of death, all considered unrelated to study treatment per Investigator: 1 patient randomized to mogamulizumab (decreased appetite, general health deterioration, hypoalbuminemia) and 1 crossover patient (cerebral hemorrhage).
Conclusions: Mogamulizumab was generally well-tolerated. Longer follow-up and treatment exposure did not identify any new safety signals.
Funding Source: Kyowa Kirin, Inc.

[P47]
DESTRUCTIVE TREATMENT METHODS FOR BOWEN DISEASE: PRELIMINARY RESULTS FROM A PROSPECTIVE RANDOMISED AND CONTROLLED STUDY

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Purpose: To compare the effectiveness of cryotherapy vs. curettage in the treatment of Bowen disease (BD).
Methods: Patients with histopathologically verified BD lesions are currently being recruited at Sahlgrenska University Hospital to a prospective, randomised controlled trial comparing cryosurgery with curettage as treatment for BD. Lesions are randomised to treatment with either cryotherapy or curettage. Wound healing was assessed by a nurse after 4–6 weeks and through self-report forms. Clinical clearance was assessed by a dermatologist after 3–6 months. The full study will also assess recurrence rates and cosmetic results at 1, 3 and 5 years after treatment.
Results: This preliminary report includes 100 lesions: 51 lesions randomised to cryotherapy and 49 to curettage. The clinical clearance was not significantly different between cryotherapy (n=50, 98%) and curettage (n=45, 92%) (p=0.20). Lesions treated with curettage showed significantly shorter self-reported wound healing time than those treated with cryotherapy (mean 3.3 vs 5.1 weeks, P<0.001). Nurse-assessed wound healing at 4–6 weeks showed significantly more healed wounds after curettage compared to cryotherapy (91% vs 58%, p=0.001)
Conclusions: Both cryotherapy and curettage seem to be effective in the treatment of BD, showing high clearance rates. Additionally, curettage may result in shorter wound healing times than cryotherapy. Still, these are preliminary results of a larger study sample with longer follow-up from which we will be able to draw further conclusions.

[P48]
INCIDENCE AND TREATMENT STRATEGIES OF PENILE INTRAEPITHELIAL NEOPLASIA IN SWEDEN 2000–2019

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Purpose: To analyse incidence, treatment strategies and complications of Penile Intraepithelial Neoplasia (PeIN) in Sweden over a period of 20 years.
Methods: Data on PeIN from the Swedish National Penile Cancer Register was analysed regarding treatment in relation to age, size and localization of the PeIN lesion and complications using Chi-square tests and logistic regression. Incidence of PeIN was calculated and age-standardized according to the European Standard population.
Results: Between 2000 and 2019 a total of 1113 PeIN cases were reported. The age-standardized incidence of PeIN was 1.40 per 100 000 men (95% Confidence Interval (CI) 1.32–1.49). An increase in incidence over time was seen with a standardized incidence rate (SIR) of 2.37 (95 % CI 1.56–3.70) in 2019 compared to baseline year 2000. Surgical or topical treatments were given in 75.0% and 14.6% of cases, respectively. Local surgery was more common than laser surgery in the last five years compared to the first five years of the study period, age adjusted Odds Ratio (OR) 5.75 (95% CI 2.94 – 11.27). Treatments with Imiquimod and topical 5-fluorouracil (5-FU) were more common than destructive methods such as Photodynamic therapy, cryotherapy, curettage and electrocautery in the last five years compared to the first five years, age adjusted OR 9.48 (95% CI 2.29–39.24).
Conclusions: A twofold increase of the age-standardized incidence of PeIN was seen in Sweden over 20 years. Change over time showed an increase of treatment strategies such as local surgery, treatment with Imiquimod and topical 5-FU.

[P49]
CLINICOPATHOLOGICAL FACTORS ASSOCIATED WITH INCOMPLETE EXCISION OF HIGH-RISK BASAL CELL CARCINOMA

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Purpose: Several studies have compared the incomplete excision rates (IERs) for basal cell carcinomas (BCCs), which range from approximately 5% to 24%. IERs for high-risk BCCs may be as high as 40–50%. The aim of this study was to evaluate the IERs for high-risk BCCs and to determine which clinicopathological factors are associated with worse surgical outcomes.
Methods: We designed a single-center, retrospective investigation including all BCCs with a histopathologically verified aggressive subtype (moderately aggressive infiltrative or highly aggressive infiltrative/morpheaform) treated with traditional surgical excision between November 2018 and May 2020.
Results: Overall, 987 cases were included and 203 (20.6%) were incompletely excised. IERs were significantly higher for highly aggressive infiltrative/morpheaform BCCs (27.0% vs. 17.6% for moderately aggressive infiltrative BCCs, P<0.001) and localiza-

tion on the face and scalp (22.4% vs. 14.7% for other locations, P=0.009), especially on the nose, ear, scalp and periorbital area (28.0–37.0% vs 9.5–16.9% for other locations, p<0.0001). The highest IERs were observed in infiltrative/morpheaform BCCs on the nose (55%). Circular excisions were also significantly more often incomplete (28.5%) compared to elliptical excisions (17.7%) (P<0.001). IERs were not associated with tumor size, excision margins, use of a preoperative biopsy or surgeon experience.
Conclusions: One-fifth of all excised aggressive BCCs were incompletely excised with traditional surgical excision. The most important risk factor was tumor location. Complete removal of high-risk BCCs is of utmost importance. Thus, Mohs micrographic surgery should be used more often in high-risk areas.

[P50]
A SINGLE INTRATUMORAL ANTI-PD1 THERAPY WITH ADJUVANT ABLATIVE FRACTIONAL LASER INCREASES THE IMMUNE CELL INFILTRATION IN BASAL CELL CARCINOMA

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Purpose: To investigate the immunological and clinical impact of intratumoral anti-PD1 therapy with and without ablative fractional laser (AFL) in basal cell carcinoma (BCC)
Methods: Explorative clinical trial in 28 patients with a total of 39 BCCs included for intervention with a single exposure of intratumoral injection with anti-PD1 therapy combined with AFL and compared with AFL-or anti-PD1 (nivolumab) monotherapies. Outcome measures were: (i) local immune cell infiltration (CD3- and CD8-positive T-cells and regulatory T-cells), (ii) clinical and histological tumor response, (iii) safety and quantification of intratumoral anti-PD1.
Results: Intratumoral anti-PD1 with adjuvant AFL led to increased immune cell infiltration (figure 1) with an almost 2.5-fold increase of CD3-positive T-cells (p=0.027) compared with a slight decrease of CD3-positive cells following anti-PD1 alone (p=0.06) and a 1.7-fold-increase following AFL monotherapy.
Partial tumor remission (>25% tumor reduction) was observed in 8/11 (73%) BCCs in the anti-PD1+AFL-group compared with 5/11 (45%) tumors in the anti-PD1 group and 5/10 (50%) BCCs in the AFL-group.
Complete clinical and histological tumor remission was obtained in 2/11 (18%) tumors both in the anti-PD1+AFL and the anti-PD1 group. No complete tumor remission was seen after AFL monotherapy.
Intratumoral anti-PD1 was well tolerated and undetectable in blood. Anti-PD1 was detectable in skin biopsies obtained at 1-and 24 hours following injection.
Conclusions: A single exposure of intratumoral anti-PD1 with adjuvant AFL increases immune cell infiltration and raises potential for tumor reduction. Intratumoral anti-PD1 and AFL was well tolerated and anti-PD1 detectable at least up to 24 hours following injection.

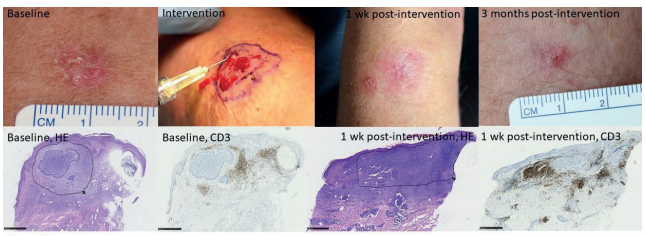

Figure 1:
Top row: Clinical photos showing a BCC at baseline, intervention with anti-PD following AFL, 1-week and 3 months post-intervention showing partial tumor remission.
Lower row: histology at baseline and 1-week post-intervention with hematoxylin and eosin (HE) staining with highlighted area illustrating peri-tumoral tissue and CD3-staining clearly illustrating increased CD3-density.

[P51]
HEALTH RELATED QUALITY OF LIFE MEASUREMENT IN PATIENTS WITH ACTINIC KERATOSIS: A SYSTEMATIC REVIEW

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Purpose: Actinic Keratosis (AK) is a recurrent and potentially premalignant keratinocyte lesion, often emerging from photodamaged areas of the skin. Due to its chronic quality and association with squamous cell carcinoma (SCC), it is expected to affect the health-related quality of life (HRQoL)[1,2]. The aim of this study is to review HRQoL-impairments in patients diagnosed with AK.
Methods: A systematic literature search was conducted oin accordance with the PRISMA guidelines. PubMed, EMBASE, Cochrane Library and PsycINFO were searched. Two reviewers independently screened titles and abstracts for eligibility, reviewed full text articles and carried out the data extraction.
Results: The search yielded 515 articles, 36 of them were included. Overall, there a small impairment in HRQoL was measured. Subpopulations that had a greater impairment in HRQoL were mostly detected by the disease specific HRQoL-tool: Actinic Keratosis Quality of Life questionnaire (AKQoL), such as females, younger patients, those with comorbidities and history of skin cancer. All detected a decrease in HRQoL immediately post-treatment that later improved above baseline.
Conclusions: Validated HRQoL-questionnaires can identify subpopulations that have a greater impairment in HRQoL. It is recommended to use both specific and generic HRQoL-instruments to be able to assess treatment and detect patients that need further support and intervention.
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[P52]
CURETTAGE VERSUS CRYOSURGERY FOR SUPERFICIAL BASAL CELL CARCINOMA: A PROSPECTIVE, RANDOMIZED AND CONTROLLED TRIAL

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Purpose: To compare the effectiveness of curettage versus cryosurgery for superficial basal cell carcinoma (sBCC) in terms of

overall clinical clearance rates after one year as well as wound healing times.
Methods: A single-center non-inferiority clinical trial was conducted. Non-facial sBCCs with a diameter of 5–20 mm were randomized to either cryosurgery using one freeze-thaw cycle or curettage. At follow-up visits, treatment areas were evaluated regarding presence of residual tumor after 3–6 months and recurrence after 1 year. Further, wound healing times were assessed
Results: In total, 97 patients with 228 sBCCs (115 randomized to curettage and 113 to cryosurgery) were included in the analysis. After one year, both treatment methods showed clinical clearance rates over 95% with no statistically significant difference (P=0,060). Wound healing times were shorter for curettage compared to cryosurgery (P<0.0001).
Conclusions: Both treatment methods showed high clinical clearance rates after one year, while curettage reduced the wound healing time. Several international guidelines and review articles on BCC management highlight the lack of randomized controlled trials performed on destructive treatment methods, as well as the lack of well-described treatment protocols. Further, studies on specific subtypes of BCCs have been requested. Curettage for BCCs (regardless of their subtype) has not been evaluated in prospective comparative studies before. This study provides new evidence that simple destructive treatment methods can be used to treat sBCC effectively and the precise technique used in this study is also presented.

[P53]
HISTOPATHOLOGICAL DIAGNOSTIC DISCORDANCE BETWEEN PUNCH BIOPSIES AND FINAL DIAGNOSTIC EXCISIONS OF INVASIVE CUTANEOUS SQUAMOUS CELL CARCINOMA: ANALYSIS OF 737 CASES

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Purpose: Recommended treatment of invasive cutaneous squamous cell carcinoma (cSCC) is surgical excision. It is common clinical practice to perform an initial punch biopsy as an aid to diagnosis. Assessment was performed of histopathological concordance between punch biopsy of cutaneous squamous cell carcinoma (cSCC) and subsequent diagnostic excision, and whether tumour size and degree of differentiation on initial biopsy are of value in determining the final diagnosis.
Methods: Retrospective observational registry-based study. Assessment of all punch biopsies with diagnosis of cSCC and subsequent surgical excision in the study period. Recording of sex, age, tumour size, grade of histopathological differentiation on both biopsy and excision specimen, and final diagnosis.
Results: Analysis of 737 biopsies and subsequent excisions. 493 (67%) of lesions were confirmed as invasive cSCC on excision. Tumour diameter >20mm gave a positive predictive value of cSCC of 91.1%. Concordance between final histopathological grade of differentiation and biopsy was 89%, kappa coefficient 0.43.
Conclusions: Punch biopsy is a poor method in identifying diagnosis and high-risk histopathological features of cSCC and furthermore can lead to delay in definitive management or potentially unnecessary surgery.

[P54]
HOW WELL DO EXPERIENCED DERMATOLOGISTS CLINICALLY ASSESS BASAL CELL CARCINOMA SUBTYPE AND THICKNESS BEFORE TREATMENT WITH PHOTODYNAMIC THERAPY?

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Purpose: Basal cell carcinoma (BCC) subtype and thickness are regarded as important predictors of response to photodynamic therapy (PDT)1. Yet, in daily practice, several tumours are clinically diagnosed without prior histological assessment before treatment. The aim of the study was to evaluate agreement between clinical and histological assessment of BCC.
Methods: BCCs where clinically assessed by experienced dermatologists from 7 centres in Norway to be of superficial or nodular subtype and < 2 mm thick. Clinical assessment was based on inspection and palpation. A punch biopsy was taken from each BCC for histological assessment and used as a reference standard. Tumour thickness was measured from stratum granulosum to the deepest tumour nest. Subtype assessment was given as sensitivity and specificity. Clinical and histological thickness was compared with mean thickness difference and paired T-test.
Results: 343 lesions were included. Sensitivity and specificity for superficial and nodular subtypes were 93 and 55%, and 55 and 85%, respectively. Mean thickness difference was significantly overestimation in superficial (0,39 mm) and underestimation in nodular (0,38 mm) and aggressive (0,48 mm) BCCs.
Conclusions: Overall, we found poor agreement between clinical and histological assessments of BCC subtype and thickness. These results suggest that biopsy for histopathological assessment is advisable before use of PDT.
Funding: The Liaison Committee for Education, Research and Innovation in Central Norway (Samarbeidsorganet).

[P55]
SKIN INFILTRATING NK CELLS IN PRIMARY CUTANEOUS T-CELL LYMPHOMA ARE INCREASED IN NUMBER AND HAVE AN ALTERED PHENOTYPE PARTLY INDUCED BY THE LYMPHOMA

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Purpose: Cutaneous T-cell lymphoma (CTCL) often has an indolent clinical course. However, some CTCL patients progress to advanced stages associated with poor survival. Natural killer (NK) cells are known for their tumor-killing ability and we hypothesized that dysregulated function of these cells might underlie CTCL progression.
Methods: We have for the first time identified and characterized skin infiltrating CD56+CD3- NK cells in fresh and fixed skin of fourteen CTCL patients. Nineteen healthy individuals were included for comparison.
Results: We found higher numbers of NK cells in CTCL skin compared to healthy skin. NK cells from CTCL skin showed reduced levels of granzyme B, CD69 and CD57 indicating potentially reduced killing activity and less mature phenotype. Upon stimulation with PMA and ionomycin, CTCL NK cells, and CD8+ T cells, were however able to produce IFNγ at high levels. We speculate that the altered phenotype and function of CTCL NK cells derive from close interaction with lymphoma cells, as we observed reduced production of granzyme B, CD69 and IFNγ in NK cells cocultured with CTCL cell line HH compared to NK cells cocultured with nonmalignant T cell line MyLa CD4.
Conclusions: The presence and functional phenotype of NK cells in CTCL skin outlines these cells as potential key players in the CTCL pathogenesis and possible targets for immunotherapy.
Funding: Swedish Society for Medical Research, the Swedish Cancer Foundation, the Swedish Medical Association, Region Stockholm, Hudfonden and Clas Groschinsky, Åke Wiberg, Magnus Bergvall and Karolinska Institutet foundations.

[P56]
CHARACTERIZATION OF REFERRED PATIENTS WITH THE TENTATIVE DIAGNOSIS OF MALIGNANT MELANOMA, EXPLORATION OF THE DIAGNOSTIC PATHWAY AND EVALUATION OF DIAGNOSTIC ACCURACY

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Purpose: The aim of the study was to document the diagnostic pathway and accuracy for patients referred to the Department of Dermatology at Bispebjerg Hospital, Copenhagen Denmark under the tentative diagnosis of malignant melanoma (MM).
Methods: This is a retrospective study of patients referred with the tentative diagnosis MM. Data was extracted from medical journals of patients who visited the department between October 2019 and October 2020. Only medical records from patients referred for evaluation of a tentative melanoma lesion were included. Data extraction included referring institution, sex, age, location of lesions, the patient's diagnostic pathway, and the diagnoses histology revealed. If the histological examination showed MM, information about thickness, stage and type were retrieved. Finally, with a follow-up period of >1 year, any new MM from the included patients were documented from the national pathology register.
Results: In total 895 lesions (548 females, 347 males) were included in the study. Majority of the patients were referred from a general practitioner (84%). MM was confirmed in *n*=69. The follow-up period resulted in a sensitivity of 100%, with a specificity of the clinics ability to detect MM of 91,7%. Results are also presented in figure 1.
Conclusions: We found similar diagnostic accuracy of MM compared to equivalent studies. The study visualizes steps in the diagnostic pathway of MM, possibly relevant for noninvasive diagnostic tools and improvement of diagnostic accuracy. Enhanced diagnostic accuracy can reduce patient morbidity and improve cost benefit.

[P57]
ANTIBIOTIC USE IN INDIVIDUALS WITH PSORIASIS A RETROSPECTIVE POPULATION STUDY ON DRUG PRESCRIPTION IN REGION JÖNKÖPING

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Purpose: In a previous study, the most frequent comedication to psoriasis was systemic antibiotics (1). This study is an ad hoc analysis aiming to characterize antibiotic subtypes dispensed to individuals with psoriasis compared to the reference population in Region Jönköping.
Methods: An ad hoc analysis on antibiotic subtypes using ATC-codes was performed. The odds of being dispensed antibiotic subtypes among individual classified as having psoriasis (*n*=4,587) compared to the reference population (*n*=268,949) was calculated. The prescription pattern of different antibiotic subtypes (defined daily doses (DDD)/total antibiotic DDD) was explored.
Results: In antibiotic groups with more than 200 recipients, the highest adjusted OR (adjusted for sex and age) was found in the antibiotic groups: J01FF (lincosamides) 2.0 (1.9 – 2.2) and J01DB (first-generation cephalosporins) 1.9 (1.8 – 2.1). The lowest adjusted OR was found in antibiotic groups: J01EA (trimethoprim and derivatives) 1.2 (1.1 – 1.4) and J01CA (penicillin with extended spectrum) 1.3 (1.2 – 1.4). There was no significant difference in the distribution of antibiotics between compared groups (Figure 1).
Conclusions: The current study shows an increased dispensation of antibiotics to individuals with psoriasis compared to the reference population. The dispensation pattern of specific antibiotic subtypes is similar in both groups.
References: Duvetorp A, et al. Dermatol Ther (Heidelb).2020. PMID:32888181

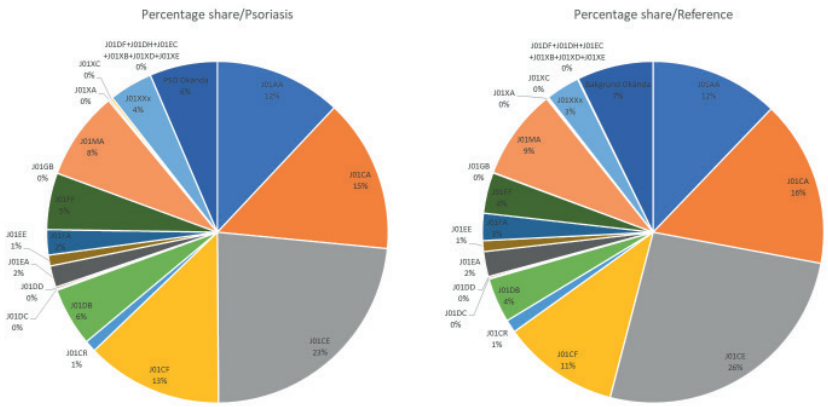

Figure 1. The proportional distribution of different antibiotic subtypes dispensed (subtype DDD/total DDD) for individuals with psoriasis and the reference population. Most frequently used antibiotic groups: J01CE (Beta-lactamase sensitive penicillins), J01CA (Penicillins with extended spectrum), J01CF (Beta-lactamase resistant penicillins), J01AA (Tetracyclines).

[P58]

TRANSLATION AV VALIDATION OF THE SELF-ASSESSMENT PSORIASIS SEVERITY INDEX (SAPASI)

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Purpose: The aim of this investigation was to translate the English version of the The Self-Assessment Psoriasis Area Severity Index (SAPASI) to Swedish and assess its validity in relation to the PASI and reliability.

Methods: We conducted a single-centre study where the patient-administered SAPASI was translated using the standardized method of back-translation. The SAPASI ranges between 0 to 72 and is considered to be equivalent to the PASI. The validity of the SAPASI was assessed using the PASI as reference. Test-retest reliability of the SAPASI was evaluated by repeated SAPASI measurements. Validity and reliability were assessed using Spearman's correlation coefficient (r) and Bland-Altman plots.

Results: Overall 51 participants with a median baseline PASI 4.4 (interquartile range [IQR] 1.8–5.6) were included in the main analysis. We observed a significant correlation ($p<0.0001$) between PASI and SAPASI scores (r=0.60) consistent with previous findings. However, Bland-Altman plots revealed that patients scored SAPASI higher compared with PASI (0.88 ± 3.7 points in average). There was a significant correlation between repeated SAPASI measurements (r=0.70) among 38 participants (median baseline SAPASI 4.0, IQR 2.5–6.1), but the first SAPASI scores exceeded the second (0.58 ± 2.36 points in average).

Conclusions: The current study offers the first validated translation of the SAPASI, that may be used as a complement to monitoring psoriasis severity. However, PASI scores cannot be transferred to SAPASI scores as patients tend to overvalue their disease severity using the SAPASI.

Acknowledgements: This study was supported the Psoriasis Fund, the Sahlgrenska University Hospital Funds and the SPIRA scholarship (AbbVie).

[P59]

NAILFOLD CAPILLAROSCOPY AS DIAGNOSTIC TEST IN PATIENTS WITH PSORIASIS AND PSORIATIC ARTHRITIS: A SYSTEMATIC REVIEW

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Purpose: Up to 30% of patients with psoriasis (PsO) develop psoriatic arthritis (PsA). Nailfold capillaroscopy (NC) is an easily applicable, non-invasive procedure to assess microcirculation. This systematic review investigates NC as biomarker and diagnostic test for PsO and PsA, and the ability to differentiate PsO from PsA, offering an overview of the NC outcomes, including correlations between capillaroscopic parameters to clinical and laboratory parameters.

Methods: This systematic review was built on the PICO and PRISMA guidelines. Using Web of Science, PubMed and Embase, a total of 21 studies was included, latest update November 19th, 2021.

Results: The following capillaroscopic parameters are found to be significantly more prevalent in PsO patients than healthy controls: reduced density, decreased vascularity, reduced length and more abnormal morphology. Likewise, in PsA patients, more abnormal morphology, more microhaemorrhages and fewer hairpin shapes are found to be significantly more prevalent. Results were non-conclusive in terms of disease activity and duration with NC findings. Random-effects meta-analysis showed a significant reduction of density in PsO patients compared to healthy controls (studies: 5, $n=209$; SMD=–0.71; 95% CI [–1.02, –0.40], $p=0.032$, heterogeneity I 2 = 25%) and in PsA patients compared to healthy controls (studies: 5, $n=130$; SMD=–1.22; 95% CI [–2.38, –0.06], $p=0.0432$, heterogeneity I 2 = 89%). No NC parameters were overall conclusive in differentiating PsO from PsA.

Conclusions: Considering the conflicting results and small sample sizes further large-scale research on the identification of capillaroscopic changes in PsO and PsA and correlations with standardised clinical and laboratory parameters are necessary.

[P60]

PSORIASIS AND BODY COMPOSITION: THE HUNT STUDY, NORWAY

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Purpose: Psoriasis is associated with obesity and a related pro-inflammatory state driving disease progression and increasing the risk of comorbidities. Increased knowledge of the altered body composition associated with psoriasis will aid the understanding of the metabolic health of individuals with psoriasis and help define more targeted prevention and treatment strategies. We aimed to increase our understanding of the association between psoriasis and altered body composition in a large Norwegian population.

Methods: The Trøndelag Health Study (HUNT)4 is a population-based study conducted in 2017–19, and included health-related questionnaires and a body composition evaluation using an InBody770-instrument measuring >50 parameters on 56,042 participants. Adjusted differences in skeletal muscle mass, total- and visceral fat were estimated by multivariable linear regression adjusted for age, sex and body mass index.

Results: Participants with psoriasis ($n=3,535$) had lower levels of skeletal muscle mass (adjusted difference –0.18 kg, 95% CI –0.30, –0.05) and higher levels of total body fat mass and visceral fat area (adjusted difference 0.26 kg, 95% CI 0.13, 0.38 and 1.79 cm2, 95% CI 0.99, 2.59, respectively) compared to participants without psoriasis ($n=52.507$).

Conclusions: We have provided the largest study to date exploring body composition in psoriasis. Body composition evaluation is superior to body mass index as it provides information on lean mass and fat mass distribution, valuable gauges of metabolic health. Psoriasis was associated with decreased muscle mass and increased fat mass, well known markers of poor health outcomes, emphasizing the need for a holistic approach to these patients.

[P61]

THE SYSTEMIC IMMUNE-INFLAMMATION INDEX AS A POTENTIAL PERIPHERAL BIOMARKER OF EFFECTIVE ANTI-PSORIATIC TREATMENT

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Purpose: Psoriasis is considered a systemic inflammatory disease. The systemic immune-inflammation index (SII), based on peripheral blood neutrophil, platelet, and lymphocyte counts, is shown to be elevated in patients with psoriasis compared to healthy controls. In this study, we investigated whether SII is affected by biologic treatment and is associated to the psoriasis area and severity index (PASI).
Methods: Blood samples were collected from adult patients with plaque psoriasis receiving either biologic treatment or no systemic anti-psoriatic treatment. SII was calculated as neutrophil count x platelet count/lymphocyte count. Psoriatic disease activity was assessed by PASI.
Results: A total of 63 patients with PASI between 0 and 28.8 were included of which 27 received biologic treatment (anti-TNF agents [n=11], anti-interleukin [IL]-17 agents [n=6], anti-IL-12/23 agents [n=10]) and 37 were untreated. SII was lower in patients receiving biologic treatment compared to untreated patients (492.7 ± 363.0 vs. 696.2 ± 46.3 [p=0.017]). For all patients, SII showed a modest though significant correlation with PASI (Pearson's r=0.26 [p=0.04]).
Conclusions: SII may be reduced by biologic treatment. PASI showed only a modest correlation with SII, suggesting that the systemic inflammation level might not be fully captured by PASI. Therefore, for optimal anti-psoriatic treatment, it might be beneficial to assess both PASI and SII when evaluating treatment effects.
The study was supported by the LEO Foundation grant no. LF16115.

[P62]

IDENTIFYING PREDICTORS OF HIGH RESPONSE LEVELS IN IXEKIZUMAB-TREATED PATIENTS WITH MODERATE-TO-SEVERE PLAQUE PSORIASIS

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Purpose: This analysis evaluated whether patient baseline characteristics or early clinical responses could predict achievement of PASI90 or PASI100 responses in ixekizumab (IXE)-treated patients at Week (W) 12 and W52.
Methods: Overall, 375 patients were included from UNCOVER-1, -2, -3, and IXORA-S, who received IXE as per label through W52. Patients were ≥18 years and had moderate-to-severe plaque psoriasis (PsO) defined as ≥10% BSA, sPGA≥3, and PASI≥12 in UNCOVER-1, -2 and -3, and PASI≥10 in IXORA-S.
Results: Higher baseline PASI and achievement of PASI75 at W2 or W4 were predictors of PASI90 responses at W12 and W52. In addition, achieving PASI75 at W4 was predictive of PASI100 responses at both timepoints, while reaching PASI75 at W2 was predictive of a PASI100 response at W12 only. Males were more likely to achieve PASI90 and PASI100 at W52.
Higher weight and presence of palmoplantar PsO at baseline were associated with reduced odds of achieving PASI90 or PASI100 at W12 and W52. Additionally, patients with prior biologic treatment were less likely to achieve PASI90 at W52 but not at W12. Concomitant psoriatic arthritis, presence of nail or scalp PsO, or higher age at baseline were not predictive of PASI90 or PASI100 responses at W12 or W52.
Conclusions: Although most patients respond well to IXE, this analysis demonstrates that certain baseline characteristics are associated with higher level responses to IXE over time. Partial response rates at W2 and W4 reliably predicted high clinical response rates at later time points.

[P63]

LONG-TERM PASI AND PRO IMPROVEMENT FOR PATIENTS WITH MODERATE-TO-SEVERE PSORIASIS OVER 5 YEARS OF IXEKIZUMAB TREATMENT: UNCOVER-1 AND -2 STUDIES

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Purpose: This analysis evaluated the effects of ixekizumab (IXE) on patient-reported outcomes (PROs) in patients with moderate-to-severe PsO over 5 years (Weeks 60–264) from UNCOVER-1 (NCT01474512) and -2 (NCT01597245).
Methods: Study participants (N=175) were PASI90 responders at Week 60 receiving IXE as per label through maintenance (Weeks 12–60) and long-term extension periods (Weeks 60–264). The impact of the PsO symptoms including itch, skin pain, and quality of life, measured by the Itch Numeric Rating Scale (NRS), Skin Pain Visual Analog Scale (VAS), and Dermatology Life Quality Index (DLQI) total score, respectively, were evaluated with response rates based on observed (obs) data and modified non-responder imputation (mNRI).
Results: During the long-term extension period, Week 60 PASI90 responders sustained a PASI90 response (Week 264: obs: 90.1%, mNRI: 78.8%). In addition, percentage improvements in DLQI (0,1), Itch NRS (0), Skin Pain VAS (0) responders were maintained annually from Week 60 (DLQI [0,1]: obs: 99.0%, LOCF: 98.3%; Itch [0]: obs: 99.3%, LOCF: 98.9%; Skin Pain VAS [0]: obs: 99.0%, LOCF: 98.6%) to Week 264 (DLQI [0,1]: obs and LOCF: 97.4% ; Itch [0]: obs and LOCF: 97.7%; Skin Pain VAS [0]: obs and LOCF: 97.7%), with minimal PASI change from baseline.
Conclusions: PASI90 response was sustained for most Week 60 PASI90 responders. Complete resolution of itch, skin pain and DLQI (0,1) was maintained through 5 years with continuous IXE treatment. Improvements in skin correlated with improvements in PROs.

[P64]

EXPLORING THE CAUSAL RELATIONSHIP BETWEEN PSORIASIS AND NON-ALCOHOLIC FATTY LIVER DISEASE

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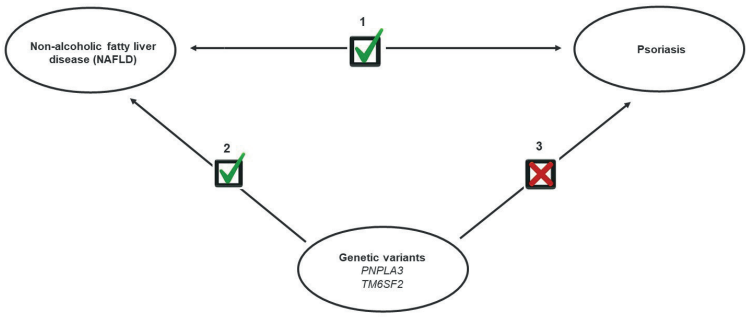
Purpose: In observational studies, psoriasis is associated with non-alcoholic liver disease (NAFLD), however, the causal relationship between the two diseases is not established. Using genetic variants, we tested whether high liver fat content or a diagnosis of NAFLD is a causal risk factor for psoriasis.

Methods: We included 109,000 individuals from the Copenhagen General Population Study, 1,279 with psoriasis and 804 with NAFLD, identified by ICD-10 codes. First, we tested whether high liver fat content (from CT-scans) or a diagnosis of NAFLD were associated observationally with psoriasis. Subsequently, we used two steatogenic genetic variants (PNPLA3 and TM6SF2) to test the causal relationship between NAFLD and psoriasis.

Results: We found that NAFLD was observationally associated with psoriasis with an odds ratio of 2.03 (95% confidence interval 1.28–3.30) comparing individuals with versus without NAFLD. The risk of psoriasis increased stepwise with increasing liver fat content with an odds ratio of 4.99 (2.03–9.45) in the highest quartile compared to the lowest (P-trend = 2×10^{-8}). PNPLA3 and TM6SF2 were both associated with high liver fat content and a diagnosis of NAFDL, but none were associated with increased risk of psoriasis.

Conclusions: Observationally, high liver fat content and a diagnosis of NAFLD were associated with psoriasis. However, genetically determined high liver fat content was not associated with increased risk of psoriasis and thus our study did not find evidence of a causal relationship between NAFLD and psoriasis.

This study was funded by Krista and Viggo Petersen´s Foundation and Herlev and Gentofte Hospital research fund.



Take-home figure: Observationally, NAFLD were associated with psoriasis (1). The genetic variants were both associated with high liver fat content and diagnosis of NAFDL (2), but none were associated with increased risk of psoriasis (3). Thus, our study did not find evidence of a causal relationship between NAFLD and psoriasis.

[P65]

QUALITY OF LIFE AND TREATMENT SATISFACTION: AN INDIRECT COMPARISON OF CALCIPOTRIOL AND BETAMETHASONE DIPROPIONATE CREAM VERSUS FOAM IN THE TREATMENT OF PATIENTS WITH PSORIASIS VULGARIS

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Purpose: to assess how calcipotriol and betamethasone dipropionate (CAL/BDP) cream impacted patients' quality of life (QoL) and treatment satisfaction versus CAL/BDP foam.

Methods: Two phase III trials assessed CAL/BDP cream QoL and treatment satisfaction in Europe (NCT03802344) and the US (NCT03308799). Two phase III CAL/BDP foam trials (PSO-ABLE and PSO-INSIGHTFUL) were identified by a literature review. An indirect comparison analysis was conducted to compare CAL/BDP cream and CAL/BDP foam. Mean difference (MD) was estimated with the difference-in-difference method applying the common comparator CAL/BDP gel.

Results: 8-week (W) CAL/BDP cream treatment showed a trend for greater DLQI improvement vs 4-W CAL/BDP foam treatment (MD for cream vs. foam: –1.00 [95%CI: –2.20–0.20; p=0.10]). CAL/BDP cream was on par with CAL/BDP foam on DLQI improvement at W4 (MD: –0.20 [95%CI: –1.37–0.97; p=0.74]) and W8 (MD: –0.80 [95%CI: –2.04–0.44; p=0.21]). Treatment satisfaction at W1 showed differences in favour of CAL/BDP cream on ease of application (MD: 1.10 [95%CI: 0.61–1.59; p<0.001]), not greasy (MD: 1.58 [95%CI: 0.88–2.27; p<0.001]), felt moisturizing (MD: 0.62 [95%CI: 0.14–1.11; p=0.01]), and a trend for greater improvement on into daily routine (MD: 0.43 [95%CI: –0.03–0.88; p=0.07]). For overall treatment satisfaction CAL/BDP cream showed greater improvement vs foam (MD: 0.62 [95%CI: 0.13–1.12; p=0.01]).

Conclusions: Indirect comparison analysis showed that CAL/BDP cream treatment was associated with a greater QoL improvement trend, when assessed at 8W for cream and 4W for foam. Results indicates that CAL/BDP cream tends to improve QoL and significantly improves treatment satisfaction versus CAL/BDP foam.

Funding: MC2 Therapeutics

[P66]

EFFICACY, SAFETY, QUALITY OF LIFE AND SATISFACTION OF PATIENTS WITH PLAQUE PSORIASIS TREATED WITH A CALCIPOTRIOL AND BETAMETHASONE DIPROPIONATE CREAM BASED ON PAD TECHNOLOGY: POOLED DATA ANALYSIS OF TWO PHASE 3 RANDOMIZED CONTROLLED TRIALS

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Purpose: To assess efficacy, safety, quality of life and treatment satisfaction from two pooled Phase 3 studies, and from single study data for efficacy on scalp and pruritus.
Methods: Two randomized, multicenter, investigator-blind, parallel-group, phase 3 trials conducted in the United States and Europe, in adults with mild-to-moderate plaque psoriasis compared a PAD Technology based cream (calcipotriol [CAL]50µg/g) and betamethasone dipropionate [BDP] 0.5mg/g cream) vs vehicle and active comparator (CAL/BDP gel). Randomization 3:1:3. Dose: 1 application/day (for a maximum of 8 weeks [W]).
Results: At W8, proportions of patients with treatment success according to PGA, reduction in modified PASI and patients reaching mPASI75 were higher ($p<0.001$) for CAL/BDP cream vs CAL/BDP gel (43.2% vs 31.9%; 64.6% vs 56.4%; 44.3% vs 34.5%); and treatment success for scalp PGA was 50.8% for CAL/BDP cream vs 9.3% for vehicle ($p<0.001$). Among patient with baseline pruritus Numerical Rating Scale (NRS) ≥4, CAL/BDP cream achieved a clinically relevant decrease (≥4 points) at W1 vs CAL/BDP gel (44.0% vs 36.9%; $p<0.05$). At W8, mean DLQI improvement was significantly greater for CAL/BDP cream vs CAL/BDP gel (6.5 vs 5.6 points). According to Psoriasis Treatment Convenience Scale, CAL/BDP cream was superior to comparator at all timepoints. CAL/BDP cream was well tolerated: local adverse reactions at a frequency <1%; no serious adverse effects related to treatment.
Conclusions: PAD Technology CAL/BDP cream has demonstrated superior efficacy, quality of life, convenience, and treatment satisfaction vs CAL/BDP gel.
Funding: MC2 Therapeutics.

[P67]
THE PRESENCE OF A MOLECULAR SCAR IN COMPLETE RESPONDERS OF SECUKINUMAB AND DEAD SEA CLIMATOTHERAPY: A COMPARATIVE IMMUNOHISTOCHEMICAL AND TRANSCRIPTOME STUDY

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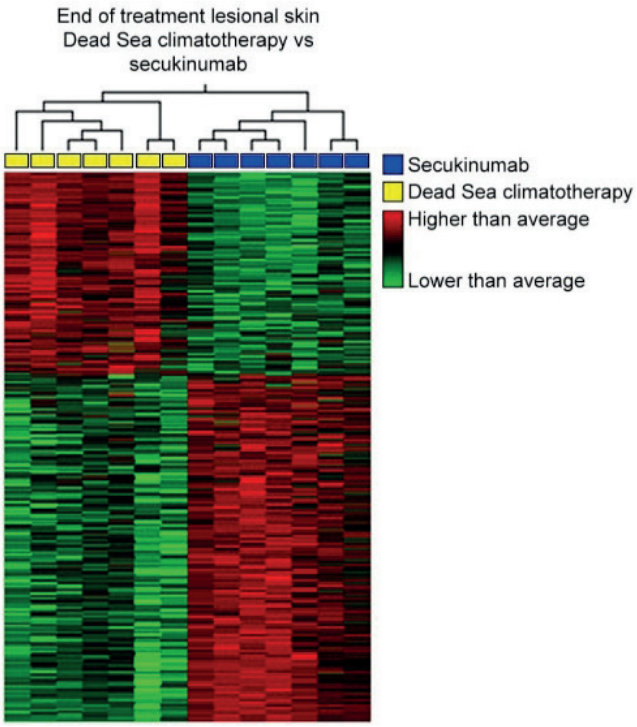
Purpose: Secukinumab, an IL-17A inhibitor, and Dead Sea climatotherapy (DSC) are used as treatments for psoriasis. Both treatments often result in complete skin clearance. However, relapse of psoriasis in previously affected areas is common, indicating a localized disease memory. To map the composition of such localized disease memory and to study any differences between treatments, we compared skin from a target lesion from patients obtaining complete skin clearance after 12 weeks of treatment with secukinumab or after 4 weeks of DSC using immunohistochemical and transcriptome analysis.
Methods: Skin tissue specimens from seven psoriasis patients treated with DSC and eight patients treated with secukinumab were acquired before and after treatment. Immunohistochemical staining and analyses were performed for a range of psoriasis biomarkers. Over 540,000 transcripts were profiled allowing for the identification of differentially expressed genes (DEGs).
Results: Both treatments almost normalized the psoriasis-associated biomarkers to nonlesional levels at end of treatment (EOT). No difference in cell numbers of CD1a+ CD3+, CD4+, CD8+, CD11c+, CD159+, CD45RO+, CD56+, CD103+, CD163+, CD207+, FOXP3+, Ki67+, and MPO+ cells were observed between the two cohorts at EOT. 479 DEGs were found at EOT between the two cohorts (Figure 1). Based on 49 psoriasis-associated genes SERPINB13, IL36G, IL36RN, SERPINB4, and AKR1B10 differed significantly at EOT between the two cohorts.
Conclusions: The treatments differentially reduced psoriasis-associated genes at EOT highlighting the potential different effects of the two treatments on disease memory in clinically healed skin.
Acknowledgements: Aage Bangs Fond, Knud Højgaards, Danish Psoriasis Association, and Lægeforeningen.



[P68]
CLIMATOTHERAPY AT THE DEAD SEA FOR PSORIASIS PATIENTS IS A HIGHLY EFFECTIVE TREATMENT IN THE SHORT TERM: AN IMMUNOHISTOCHEMICAL STUDY

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Purpose: In psoriasis, numerous dysregulated immune cells are present in lesional skin. Four weeks of Dead Sea climatotherapy (DSC) in Ein Gedi in Israel is used to treat psoriasis. The effect of DSC is comparable to the most effective biologics; however, the treatment effect is almost nullified after three months. The aim of this study was to investigate the effectiveness of DSC on psoriasis biomarkers.
Methods: Formalin-fixed paraffin-embedded tissue specimens from 18 psoriasis patients treated with DSC were acquired from

a target plaque before treatment, at end of treatment (EOT), and at relapse of the first visible sign of psoriasis after approximately three months. Immunohistochemical staining was performed and quantified. Selected blood markers were acquired at the same time-points

Results: CD3, CD4, CD8, CD11c, CD103, CD163, CD207, Ki67, MPO, and epidermal thickness in lesional skin were almost normalized to baseline nonlesional levels at EOT. At relapse the inflammatory environment had almost reverted to baseline lesional levels. No effects on cholesterol, c-reactive protein, glucose, hemoglobin A1c, and triglycerides in the blood were observed.

Conclusions: DSC is very effective in the short term however long-term disease control is not obtained.

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[P69]
PATIENT-REPORTED OUTCOMES IN PATIENTS WITH MYCOSIS FUNGOIDES

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Purpose: Mycosis fungoides (MF) is the most common type of T-cell lymphoma. The degree of skin involvement varies greatly between patients and sometimes also over time in any individual. To increase the knowledge of the disease, and how patients are affected both physically and mentally, a local skin lymphoma registry was initiated at the Karolinska University hospital in 2019. The aim was to investigate how patients are affected by MF, and identify any gender differences in treatment modality or patient-reported outcomes.

Methods: Upon visits at our clinic the MF stage is assessed according to the TNMB-classification, and the disease activity by the Modified Severity-Weighted Assessment Tool (mSWAT). Clinical data such as medical history and treatment are also registered. The patients answer a number of surveys, including the Dermatology Life Quality Index (DLQI) and the Visual Analogue Scale for itch (VASitch).

Results: At present, 44 patients with MF have been included in the registry. As expected, patients with more advanced stages of MF and higher mSWAT report more impaired DLQI- and VASitch-scores. More females than males were untreated, and more males than females received topical treatment. Systemic treatment was equally distributed between males and females.

Conclusions: Our preliminary findings indicate that MF patients with high disease activity report lower health related quality of life and more pronounced pruritus. A longitudinal investigation is ongoing, to further increase the understanding of MF patients' experience of their disease and how different treatment modalities affect them physically and mentally.

[P70]
SEX-ASSOCIATED RISK FACTORS FOR CO-INFECTION WITH CHLAMYDIA TRACHOMA'S AND NEISSERIA GONORRHOEA AMONG PATIENTS PRESENTING TO A SEXUALLY TRANSMITTED INFECTION CLINIC

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Purpose: The aim of this study was to investigate the characteristics of patients co-infected with Chlamydia trachomatis and Neisseria gonorrhoea.

Methods: A retrospective case-control study was performed, which included 399 co-infected patients seen at a sexually transmitted infection clinic in Copenhagen, Denmark. Case-control groups included 300 patients who tested positive only for N. gonorrhoea, 300 who tested positive only for C. trachomatis, and 300 who tested negative for both N. gonorrhoea and C. trachomatis in the same study period.

Results: For men, non-Danish origin (odds ratio (OR) 2.3, 95% confidence interval (Cl) 1.34–4.12), previous sexually transmitted infections with C. trachomatis (OR 3.3, 95% CI 1.94–5.92) and N. gonorrhoea (OR 10.6, 95% CI 6.36–17.76), and higher number of sex partners (OR 1.7, 95% Cl 1.40–2.28) were significantly associated with diagnosis of co-infection. For women, previous sexually transmitted infections with C. trachomatis (OR 6.7, 95% CI 3.89–11.78) and N. gonorrhoea (OR 10.4, 95% CI 4.99–21.71), and higher number of sex partners (OR 1.8, 95% CI 1.28–2.56) were significantly associated with a diagnosis of co-infection, whereas being of non-Danish origin was, in some cases, a protective factor (OR 0.3, 95% CI 0.17–0.69).

Conclusions: This study demonstrated sex-associated characteristics that should raise concern about coinfection, including: for men, being of non-Danish origin, men who have sex with men status, and higher age, and, for women, young age, in particular, and previous sexually transmitted infections.

[P71]
GENOME-WIDE ANALYSIS OF DANISH BLOOD DONORS REVEALS TWO NOVEL INTRON MUTATIONS ASSOCIATED WITH ALTERED RISK OF CONDYLOMA ACUMINATA

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Purpose: The visible sign of human papillomavirus HPV infection, condyloma, is often caused by low-risk HPV strains. Genetic susceptibility to benign presentations of HPV infection including condyloma is an understudied area. Thus, the purpose of this study was to investigate genetic susceptibility to condyloma in Danish blood donors.

Methods: Participants of the Danish Blood Donor Study (n>84,000) were included in the study. Cases were defined using national registry data on diagnosis and medical treatments of condyloma. A genome-wide approach and fine-mapping of the human leukocyte antigen (HLA) region (6p22.1) was used, adjusted for age, sex, body mass index, smoking, and principal components.

Results: Two novel intron mutations in the protein coding genes DAB1 (1p32.2) and FHIT (3p14.2) were associated with condyloma. The single nucleotide polymorphism (SNP) in the DAB1 gene increased the risk of condyloma, odds ratio (OR) 5.17 (95% confidence interval (CI): 3.02–8.85), $p=6.13 \times 10^{-8}$, and the SNP in the FHIT gene decreased the risk, OR 0.19 (95% CI: 0.10–0.35), $p=7.47 \times 10^{-9}$. In addition, there were seven risk HLA-alleles, OR 1.11–1.38, and 12 protective HLA-alleles, OR 0.43–0.80, associated with condyloma.

Conclusions: Two SNPs in the DAB1 and FHIT gene and several HLA-alleles seems associated with altered risk of condyloma.

Acknowledgements The Danish Blood Donor Study is funded by The Danish Council for Independent Research - Medical Sciences, The Danish Administrative Regions, The A.P. Møller Foundation for the Advancement of Medical Science, and The Danish Bio- and Genome Bank.

[P72]
CHLAMYDIA TRACHOMATIS AND LYMPHOGRANULOMA VENEREUM IN EXTRA-GENITAL SAMPLES: A RETROSPECTIVE POPULATION-BASED STUDY FROM COPENHAGEN, DENMARK, 2011–2017

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Purpose: To establish the prevalence rate of lymphogranuloma venereum (LGV) genotype positive samples among Chlamydia trachomatis (CT) positive extra-genital samples from the Capital region, Denmark.

Methods: Rectal and pharyngeal CT positive samples submitted to the Department of Clinical Microbiology, Hvidovre Hospital from 2011 to 2017 were forwarded to Statens Serum Institut for LGV testing. CT and LGV prevalence were calculated according to sampling site and gender.

Results: 17491 rectal samples and 23821 pharyngeal samples were included in the study. In 2011, 3290 extra-genital CT samples was received compared to 13879 in 2017. CT was detected in 1103 (7.7%) rectal and 233 (1.3%) of pharyngeal samples from men, and in 333 (10.3%) rectal and 138 (2.4%) pharyngeal samples from women. LGV was found in 145 (8.3%) of 1739 referred samples. LGV was detected in 140 (13.3%) rectal and 2 (0.9%) pharyngeal samples from men, and in 3 (0.9%) rectal and no pharyngeal samples from women. The yearly prevalence rate of CT in rectal samples varied from 6.1% to 9.3% (men) and from 3.3% to 13.3% (women), and from 1.1% to 1.9% and from 0.9% to 3.5% in pharyngeal samples, respectively. The yearly rectal LGV prevalence rate among men varied from 10.2% to 21.2%.

Conclusions: The total extra-genital samples increased fourfold comparing year 2011 and 2017 with an unchanged CT prevalence rate. Due to a low prevalence of rectal and pharyngeal LGV in women and pharyngeal LGV in men, routine testing for LGV in these sample types has been discontinued.

		2011-2017	2011	2012	2013	2014	2015	2016	2017
Male									
Urogenital	Samples total [1]	187448	23531	24355	25916	27904	28536	27894	29312
	Positive CT samples [2]	21171	2413	2554	2792	3276	3406	3384	3346
	Prevalence CT (%)	11.3	10.3	10.5	10.8	11.7	11.9	12.1	11.4
Rectal	Samples total [1]	14256	1309	1370	1555	1875	2316	2479	3352
	Positive CT samples [2]	1103	85	84	131	175	193	198	237
	Prevalence CT (%)	7.7	6.5	6.1	8.4	9.3	8.3	8.0	7.1
	Sent for LGV analysis [3]	1053	66	63	126	166	186	206	240
	Positive LGV samples	140	14	10	21	20	19	28	28
	Prevalence LGV (%)	13.3	21.2	15.9	16.7	12.0	10.2	13.6	11.7
Pharyngeal	Samples total [1]	17995	1385	1452	1707	2155	2633	2675	5988
	Positive CT samples [2]	233	19	20	24	40	31	31	68
	Prevalence CT (%)	1.3	1.4	1.4	1.4	1.9	1.2	1.2	1.1
	Sent for LGV analysis [3]	212	14	15	21	37	27	30	68
	Positive LGV samples	2	0	0	0	0	2	0	0
	Prevalence LGV (%)	0.9	0	0	0	0	7.4	0	0
Female									
Urogenital	Samples total [1]	591068	84219	84062	85735	84392	84915	84006	83739
	Positive CT samples [2]	37795	4692	4654	5057	5824	6046	5950	5572
	Prevalence CT (%)	6.4	5.6	5.5	5.9	6.9	7.1	7.1	6.7
Rectal	Samples total [1]	3235	271	79	104	170	500	714	1397
	Positive CT samples [2]	333	9	5	7	16	53	95	148
	Prevalence CT (%)	10.3	3.3	6.3	6.7	9.4	10.6	13.3	10.6
	Sent for LGV analysis [3]	339	4	3	7	17	55	97	156
	Positive LGV samples	3	0	0	0	0	0	2	1
	Prevalence LGV (%)	0.9	0	0	0	0	0	2.1	0.6
Pharyngeal	Samples total [1]	5826	325	158	214	388	705	894	3142
	Positive CT samples [2]	138	3	2	4	10	25	29	65
	Prevalence CT (%)	2.4	0.9	1.3	1.9	2.6	3.5	3.2	2.1
	Sent for LGV analysis [3]	135	2	0	3	9	25	32	64
	Positive LGV samples	0	0	0	0	0	0	0	0
	Prevalence LGV (%)	0	0	0	0	0	0	0	0
Total	Extra-genital samples [1]	41312	3290	3059	3580	4588	6154	6762	13879
	Extra-genital CT positive samples	1807	116	111	166	241	302	353	518
	Extra-genital sent for LGV analysis	1739	86	81	157	229	293	365	528

Chlamydia trachomatis (CT) and lymphogranuloma venereum (LGV) samples from Department of Clinical Microbiology Hvidovre Hospital (DCM HH) and Statens Serum Institut (SSI).

[1] Total number of samples collected at DCM HH.

[2] Positive CT tests collected in the database of DCM HH.

[3] Samples sent to SSI from DCM HH to be analysed for LGV, collected in the database of SSI.

[P73]

AN ECONOMIC ANALYSIS OF TELEDERMOSCOPY IN THE REGION OF SOUTHERN DENMARK

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Purpose: To calculate and compare costs of teledermoscopy and standard care in the form of face-to-face evaluation by a dermatologist of suspected skin cancers.
Methods: In 2018, 48 general practices in the region of Southern Denmark included 519 adults with suspected skin cancers and referred them to a specialized (university hospital) skin cancer clinic for teledermoscopic and face-to-face (FTF) evaluation. This cost-minimization analysis was based on detailed information obtained in a diagnostic accuracy study and a patient questionnaire study on teledermoscopy, supplemented with publicly available data on e.g. standard reimbursement rates for health care services. Investment costs, costs in general practice, hospital associated costs and patient costs were included to calculate the average cost per patient episode. Two independent sets of data on teledermoscopy (TDS1 + TDS2) and one data set on FTF evaluation were available from the diagnostic accuracy study. Sensitivity analyses were performed for six different clinically relevant scenarios.
Results: The total cost per patient episode was €17.2 to €23.1 higher for teledermoscopy than for standard care. (FTF: €620.7 (95% CI €594.8-646.5), TDS1: €643.8 (95% CI €613.5-674.1) p=0.009, TDS2: €637.9 (95% CI €607.0-668.7) p=0.08) However, patient costs and hospital associated costs were significantly reduced.
Conclusions: Benefits to patients may warrant the slightly higher costs of teledermoscopy. Sensitivity analyses indicated that number of preventable face-to-face evaluations and the distance to the dermatologist were the two factors that influenced costs the most. This is relevant to consider when implementing teledermoscopy in clinical practice.

[P74]

DIFFERENTIATING MALIGNANT FROM BENIGN FOR MELANOCYTIC AND NON-MELANOCYTIC SKIN TUMORS- A PILOT STUDY ON HYPERSPECTRAL IMAGING AND CONVOLUTIONAL NEURAL NETWORKS

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Purpose: Several optical imaging techniques have been developed to ease the burden of skin cancer disease on our health care system. Hyperspectral (HS) images identify biological tissues by their diffuse reflected spectra.
Methods: In this second part of a three-phased pilot study, we used a novel hand-held SICSURFIS Spectral Imager with an adaptable field of view and target-wise selectable wavelength channels, developed to provide detailed spectral and spatial data on lesions of complex surfaces. 42 lesions were studied: 7 melanomas, 13 pigmented and 7 intradermal nevi, 10 basal cell and 5 squamous cell carcinomas. The HS images (33 wavelengths, 477-891 nm) provided photometric data through individually controlled illumination modules, enabling the convolutional networks to utilise both spectral, spatial, and skin surface models for the analyses. All lesions were excised for histopathological analyses.
Results: The pixel-wise analysis provided map-like images (Figure I) and classified melanocytic lesions with a sensitivity and specificity of 87% and 93% and correspondingly for non-melanocytic lesions, 79% and 91%. The majority voting analysis, providing the most probable lesion diagnosis, diagnosed 41 of 42 lesions correctly.
Conclusions: This pilot study indicates that this non-invasive hyperspectral imaging system with shape and depth data is feasible in differentiating melanocytic and non-melanocytic skin tumours even of complex skin surfaces. These promising results support the results of our first pilot study; however, need to be verified in a broader sampled material.

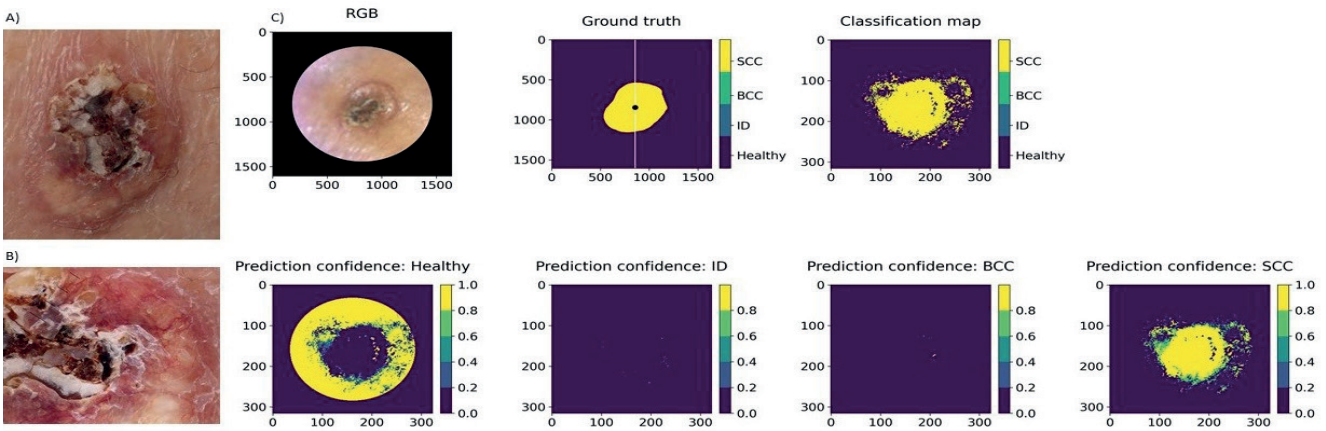

Figure I. A A) clinical and B) dermoscopy image and C) the classification map of a 15mm SCC on the leg. Clinically this lesion could be either a basal cell carcinoma (BCC) or a squamous cell carcinoma (SCC), but it was correctly classified as a SCC by the SICSURFIS system. ID = intradermal nevus. RGB=red-green-blue.

[P75]

SUCCESSFUL HEALING OF TWO VERY LARGE PELVIC-PERINEAL CHRONIC FISTULIZED ULCERS IN A PATIENT WITH CONGENITAL MYELOMENINGOCELE TREATED WITH A CARBOHYDRATE POLYMER WITH ZINC OXIDE: CASE REPORT

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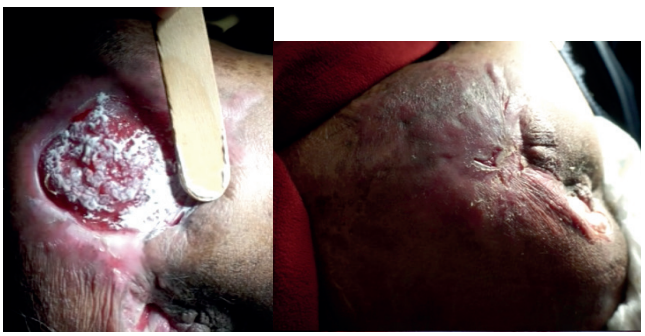
Purpose: To present a new successful therapeutic option for chronic complicated pressure lesions using a Carbohydrate Polymer with Zinc Oxide (CPZO®)

Methods: A 20-year-old male patient diagnosed with congenital Myelomeningocele was seen and examined in our office on December 08, 2014. When we first received the patient, he had two very large fistulized pressure ulcers stage IV in the gluteal and perianal areas. Both ulcers presented evidence of infection, with purulent fecal discharge, and extensive inflammation and destruction of surrounding tissue. The patient had been previously treated in two of the largest social security institutions, where he received care for 13 months through several hospitalizations. His family reported that previous treatments included multiple surgical debridements of the wound, local and systemic antibiotic therapies, even using fluoroquinolones applied intravenously; two different sessions of skin grafting were carried out under local anesthesia which failed to improve the ulcers.

The patient was treated with daily topical application of a Carbohydrate Polymer with Zinc Oxide (*Pebisut®, CPZO) applied directly by the mother on the ulcers after his daily baths waiting 2–3 minutes for complete dermal penetration and then covering it with a petrolatum gauze.

Results: Finally, three months after starting the treatment, the patient presented 100% healing of both ulcers, treated with a total of 4 jars (30 g. each) of CPZO.

Conclusions: This case proves the therapeutic efficiency of CPZO® a new Medical Device II with pro- healing, anti-inflammatory and bactericidal properties on a young male patient with chronic complicated pressure ulcers.



[P76]

TIRBANIBULIN 1% OINTMENT FOR ACTINIC KERATOSIS: POOLED DATA FROM TWO PHASE 3 STUDIES

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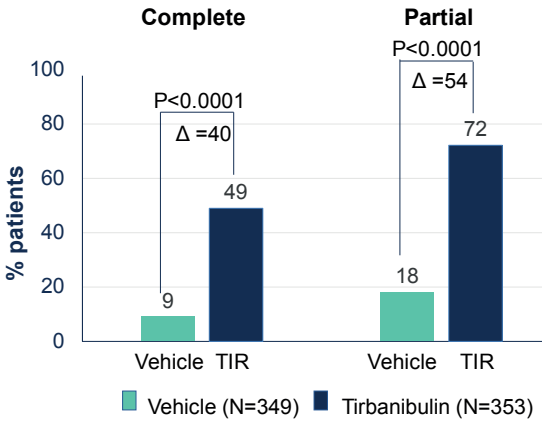
Purpose: To present tirbanibulin 1% ointment pooled data from two Phase 3, randomized, double-blinded, vehicle-controlled studies in patients with AK of face or scalp, including 1-year follow-up.

Methods: Eligible patients (4–8 clinically visible lesions, 25cm^2 area) were randomized to tirbanibulin (n=353) or vehicle (n=349) (once-daily self-application for 5 days). Primary and key secondary efficacy endpoints: complete (100%) clearance (CC) and partial (≥75%) clearance (PC) at Day (D) 57. Safety endpoints: adverse events (AEs) and local skin reactions (LSRs). For each patient-visit, six LSRs were scored 0–3 [absent-severe] and summed to a composite score (0–18). Patient scores were average for each visit. Patients achieving CC at D57 were followed for 1 year.

Results: At D57, CC/PC rates were significantly higher for tirbanibulin vs. vehicle (Figure). Median reduction in lesion count was also greater with tirbanibulin (87.5% vs. 20%). Treatment-related AEs (tirbanibulin vs. vehicle) were few; mostly mild transient application-site pruritus (9% vs. 6%) and pain (10% vs. 3%). LSR signs were present at baseline, increased after treatment, peaked at D8 and resolved by D29. Maximum mean ± SD composite LSR scores were 4.1 ± 2.32 (tirbanibulin) and 1.0 ± 1.14 (vehicle). LSRs were mostly transient, mild/moderate erythema and flaking/scaling. All LSRs resolved, stabilized or returned to baseline, not requiring intervention. No tirbanibulin-related deaths/discontinuations/serious AEs occurred. During the 1-year follow-up, an estimated 47% of patients had any recurrent lesion, 73% any recurrent/new lesion, and no patients experienced treatment-related AEs.

Conclusions: Tirbanibulin was well tolerated, safe, and effective, potentially making it a valuable new AK treatment addition.

Figure. Clearance rates of AK lesions (ITT population)



AK, actinic keratosis; ITT, intention-to-treat; TIR, tirbanibulin

[P77]

NON-ATOPIC CHRONIC NODULAR PRURIGO (PRURIGO NODULARIS HYDE) - EVIDENCE FOR THE CURRENT TREATMENT OPTIONS. A SYSTEMATIC REVIEW OF THE LITERATURE

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Purpose: Chronic Nodular Prurigo (CNPG) is a chronic, inflammatory skin disease, characterized by excoriated, dome-shaped nodules, papules, or plaques. The lesions are intensely pruritic. It has been proposed, that CNPG exists in an atopic and a non-atopic form. Aim of this study was to highlight the best-evidenced treatment options for non-atopic CNPG by conducting a systematic review of the literature and a meta-analysis on the data.
Methods: We performed a systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines. After deduplication, 710 articles were included in the initial screening. Unfortunately, only three randomized, controlled trials (RCTs) and six case studies met our inclusion criteria, making data too sparse for conducting a meta-analysis. Instead, we present a detailed description of the results of the RCTs and case studies.
Results: The three RCTs concerned treatment with hydrocortisone 1% cream versus pimecrolimus 1% cream, aprepitant versus placebo and nemolizumab versus placebo. Hydrocortisone, pimecrolimus, and nemolizumab showed a statistically significant reduction in pruritus. The six included case series concerned treatment with thalidomide, low-dose thalidomide, ultraviolet A phototherapy, pregabalin, and naltrexone. Surprisingly, pregabalin was the most effective pruritus-reducing treatment among the treatments included in this review.
Conclusions: Few studies on CNPG divide their results in atopic and non-atopic CNPG and evidence for the current therapies for non-atopic CNPG is sparse. Several new therapies are in the pipeline, hopefully offering effective treatment options for both atopic and non-atopic CNPG.
Acknowledgements: There has been no funding for the study.

[P78]

IMPACT OF A MULTI-VESICULAR EMULSION CREAM ON SYMPTOM SEVERITY IN DRY SKIN CONDITIONS

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Purpose: Dry skin conditions are associated with various symptoms including pruritus, excessive dryness and redness. A multi-vesicular emulsion (MVE) controlled-release emollient cream containing 3 naturally occurring ceramides, triglycerides, cholesterol, and the humectant glycerol can provide controlled, sustained hydration and symptom relief. This study evaluated the impact of MVE cream as adjuvant therapy on dry skin symptoms.
Methods: Between 11Feb – 09Dec2020, 17 dermatologists across 3 countries prescribed twice daily MVE cream as adjuvant therapy for various dry skin etiologies. Symptom intensity was rated at Days 0 and 28 (0=absent, 10=very intense) by the subject, dermatologist, and subject interviewed by dermatologist.
Results: Analysis included 121 subjects with complete data for all assessments. After 28 days, mean pruritus, dryness, and redness were significantly improved ($p<0.0001$) across all assessment types:

	Pruritus		Dryness		Redness	
Assessment type	Day 0	Day 28	Day 0	Day 28	Day 0	Day 28
Subject	5.5+2.97	2.2+2.48	6.7+2.08	3.0+2.07	4.6+2.92	1.8+1.93
Dermatologist	5.5+2.86	1.9+2.23	6.4+1.98	2.5+1.73	4.4+2.63	1.4+1.58
Subject interviewed by dermatologist	5.6+3.00	2.1+2.37	6.5+2.18	2.9+1.92	4.4+2.77	1.8+1.91

mean+SD

Significant differences ($p<0.05$) were seen between subject and dermatologist assessments of dryness (Days 0 and 28) and redness (Day 28). No significant differences were seen between subject assessment and subject interviewed by dermatologist.
Conclusions: MVE emollient cream significantly improved burdensome dry skin symptoms. Additionally, the consistency seen between subject interviews and self-assessments may be relevant, considering the current frequency of telemedicine visits. However, the deviation in assessment of redness and dryness indicates greater objectivity of professional evaluation.
Acknowledgements: Funded by L'Oréal.

[P79]

PREVALENCE AND PREDICTORS OF ANGIOEDEMA IN CHRONIC URTICARIA PATIENTS

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Purpose: To determine the prevalence and predictors of angioedema in a cohort of hospital outpatients with chronic urticaria.
Methods: Adult patients with chronic urticaria who had been recently referred to the university hospital dermatology department were included. Interview and examination were used to collect information.
Results: A total of 350 patients (69,4% female) with a mean age of 42,3 years (range 18–91) were included. Of these, 223 (63.7%) had chronic spontaneous urticaria (CSU), 69 (19.7%) had chronic inducible urticaria (CIndU) and 58 (16.6%) had both CSU and CIndU. The mean duration of urticaria symptoms was 5.3 years. Angioedema was present in 145 (41.4%). Compared to patients without angioedema, patients with angioedema were more likely to have: Female sex (76.6% vs. 64.4%, $p=0.015$), CSU only (76.6% vs. 54.6%, $p<0.001$), positive urticaria basophil histamine release test (20.9% vs. 4.6%, $p<0.001$), lower mean levels of blood basophils (0.03 E9/L vs. 0.04 E9/L, $p<0.001$), higher C-reactive protein (8.7 mg/L vs. 5.6 mg/L, $p=0.045$), higher dermatology life quality index (10.8 vs. 8.1, $p<0.001$), higher overall disease bother score numeric rating scale (7.1 vs. 6.0, $p<0.001$), a history of prednisolone use (37.9% vs. 17.6%, $p<0.001$) and omalizumab prescribed at the first hospital visit (46.9% vs. 25.4%, $p<0.001$).
Conclusions: Almost half of all patients with chronic urticaria have concomitant angioedema and these patients are characterised by a female preponderance, signs of autoimmunity, lower quality of life and greater requirement for immunosuppressive treatment.

[P81]

EFFICACY AND SAFETY RESULTS FROM A RANDOMIZED CONTROLLED PHASE 3A STUDY OF 1% GLYCOPYRRONIUM BROMIDE CREAM FOR THE TREATMENT OF PRIMARY AXILLARY HYPERHIDROSIS

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Background: Primary axillary hyperhidrosis (PAH) is a chronic condition characterized by excessive sweating in the armpit due to dysregulation of the sympathetic nervous system. Since excessive sweating significantly impairs the patients' quality-of-life. A cream containing glycopyrronium bromide (GPB, known anticholinergic substance) has shown promising efficacy and safety results in a Phase 1b study1. Data of the placebo-controlled part of a phase 3 study with 1% GPB cream are shown.
Methods: The multicenter, randomized, double-blind Phase 3a study enrolled 171 patients with PAH (placebo: 84, 1% GPB-group: 87). Sweat production was measured using gravimetry. Patients assessed their quality-of-life impairment using HDSS and HidroQoL©.
Results: Absolute change in sweat production from Baseline to day 29 was significantly greater in the 1% GPB- than in the placebo-group (-197.08 mg GPB vs. -83.49 mg placebo, p=0.0038). The responder-proportion with HDSS (23% GPB vs. 11.9% placebo) and HidroQoL© (59.8% GPB vs. 26.2% placebo) was twofold higher in the GPB-group. Local tolerability and systemic safety were good; only mild to moderate Adverse Drug Reactions (ADRs) occurred: dry mouth the most common (16.1%)2. Interim analyses showed similar frequency of ADRs in patients treated for 4 weeks versus patients treated for 28 and 52 weeks i.e. for dry mouth (11.4% to 15%).
Conclusion: Topical application of 1% GPB cream over 4 weeks showed significant reduction in sweat production at day 29 as well as improvement in quality of life. The cream was well tolerated with mild to moderate adverse events, most common being dry mouth. The open-label part of the study (72 weeks) was completed in November 2021.

[P83]

DISFIGURING PLANOCELLULAR PAPILLOMA IN THE EAR SUCCESSFULLY TREATED WITH ABLATIVE FRACTIONATED CARBON DIOXIDE LASER

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Background and purpose: *A 64 years-old man had a large chronic semi-occluding planocellular papilloma in the ear tract. He was bothered by burning sensations, itching, intermittent exudation and social discomfort. Histology confirmed the diagnosis.*
A treatment with surgical removal and skin transplantation was proposed, but first, removal with combined curettage and ablative fractionated 10,600 nm carbon dioxide (CO2) laser was attempted. No similar cases have previously been published.
Methods: The ear was anesthetized by an external ear block of n. auricularis posterior. A sequential treatment regimen with a combination of curettage and fractional ablative CO2 laser (Lumenis Ultrapulse, Active FX, 125 mJ/cm^2, 150-350 Hz, size 2-4, density 9) was applied to remove the warty tissue.
Results: The patient experienced minimal discomfort during treatments and had a healing time of 1-2 weeks after each treatment. After four treatments, the papilloma cleared and all subjective symptoms disappeared with an excellent cosmetic result and no scarring (figure 1).
Conclusions: Sequential Fractional ablative CO2 laser combined with curettage should be considered for large benign lesions in areas that are difficult to access before moving on to surgery with subsequent skin transplantation.

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