SHORT COMMUNICATION

The Epidemiology of Chronic Prurigo: Lessons Learned

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Chronic prurigo (CPG) is defined as "a distinct disease defined by the presence of chronic pruritus and multiple localized or generalized pruriginous lesions. CPG occurs due to a neuronal sensitization to itch and the development of an itch–scratch cycle. CPG can be of dermatological, systemic, neurological, psychiatric/psychosomatic, multifactorial or undetermined origin" (1, 2).

Shedding light on its epidemiological aspects is important. Epidemiological studies reporting prevalence and incidence rates of CPG have become more frequent in the last years since new systemic therapies have been approved for use (1). It appears as if this development has led to more interest and support of epidemiological research. This article summarizes information and gaps in research on the epidemiology of CPG and hints for future research.

WHAT WE HAVE LEARNED SO FAR

There were no epidemiological studies on CPG until 2018 and interest in the disease was low. Since then and especially during the last 5 years, several studies have been conducted, providing insight into the prevalence and incidence of CPG and its associated factors.

Prevalence and associated factors

CPG can occur in all age groups, with the elderly being the most affected (3). A German study reported the prevalence of CPG according to different age groups and the overall study population of people insured at 1 health insurance provider (4). In this study, the age group 90 years and older had a prevalence of 0.55% compared with 0.21% in the whole study population. More females suffer from CPG according to most studies, with percentages ranging from 54.8–68% (3, 5–11). Studies from Japan and South Korea reported a male predominance (51.3 and 56.8% respectively) and higher prevalence rates than many European studies (10, 11). African-Americans seem to be disproportionally affected by CPG, with them being 3.4 times more likely to suffer from CPG compared with Caucasians, according to a US register-based study (12). In a Danish study, CPG patients had a comparatively lower educational level than the general population estimates (38% vs 30% with just a primary school education). CPG patients also had lower annual income compared with an age-, sex-, and education-matched control group (8). They earned €37,580 (SD: 30,834) on average while Controls earned €43,235 (SD: 122,366). Prevalence rates in different cohorts and registers range from 2 to 553 per 100,000 patients (**Table I**). Six studies reported incidence rates (Table I). The worldwide prevalence of CPG in the general population was estimated by meta-analysis to be 0.083% (17).

Comorbidities

CPG patients often suffer from comorbidities such as, e.g., atopic dermatitis (AD), depression, anxiety, chronic

Table I. Epidemiological studies on chronic prurigo (CPG)

Country	Age	Study population	Prevalence per 100,000	Incidence per 100,000
USA (3)	≥ 18	Patients registered in the National Institute of Health database All Of Us	190	n.r.
USA (13)	n.r.	Patients from the Merative MarketScan Commercial and Medicare claims databases	34 (52.9, general population estimate)	n.r.
USA (14)	n.r.	Patients from Medicare (2017) and the US claims databases Symphony Health (2017) and LexisNexis PxDx (2017/2018)	36.7–43.9	n.r.
Germany (4)	≥ 18	Patients insured at the German health insurance company DAK-Gesundheit	210 (190, general population estimate)	130 (120, general population estimate)
Germany (5)	n.r.	Patients insured with German statutory health insurance (SHI)	110	20
France (15)	n.r.	Inpatients (2019–2018) from the Système National des Données de Santé (SNDS database) and outpatients from the Brest itch expert centre	46,7	n.r.
England (6)	≥ 18	Primary care patients from the Clinical Practice Research Datalink and patients from the Hospital Episode Statistics	24.9–88	3.61–9.31
England (7)	n.r.	Primary Care patients from the Clinical Practice Research Datalink and Inpatients from the Hospital Episode Statistics	32.7	2.88 (per 100,000 patient-years)
Denmark (8)	n.r.	Hospital patients from the Danish national health registers	2–14.1	0.58–1.45
Sweden (16)	≥ 18	Patients from patient, prescription. and cost-per-patient registers of adults in the years 2015–2020	10.6–12.4	n.r.
Poland (9)	n.r.	Patients from the National Health Fund and Inpatients from the Department of Dermatology at the University of Rzeszów	8.69–9.26	n.r.
South Korea (10)	n.r.	General dermatology outpatients	411–553	n.r.
Japan (11)	≥ 15	Patients from the JMDC claims database	14.1–40.9 (total) 526.3–6,614.3 (with AD)	10.7–23.8 (total) 400–3,397 (with AD)

Notes: n.r.: not reported.

obstructive pulmonary disease (COPD), hypertension, chronic kidney disease, and congestive heart failure (**Fig. 1**). These comorbidities are more likely to occur in CPG patients compared with healthy controls or even patients with other skin diseases, e.g., psoriasis (3, 5, 8, 12).

Therapies

CPG therapies have raised more attention during the last years. According to these epidemiological studies most patients reported the use of topical corticosteroids, many moderate to very strong ones (70.9–85.5%), and systemic antihistamines (6, 10, 11, 15, 16). Systemic corticosteroids were used especially in severe CPG, with Swedish patients reporting the use of systemic corticosteroids in 78.7% of those affected, whereas in another study Korean patients used them in only 23.11% of cases (10, 16). Dupilumab and nemolizumab are newly approved biological therapies and are the only licensed medications for treatment of refractory CPG since 2022 and 2025 respectively. These monoclonal antibodies inhibit different interleukins and therefore impede itch and disease progression.

WHAT IS YET TO BE LEARNED

Methodology

There was a lack of clear disease definition until 2018 (2) and no diagnostic and treatment algorithm until 2020 (18). CPG is at present still difficult to assess in all its dimensions and difficult to treat. Many healthcare systems underestimate the burden of CPG. This is reflected in the previous existing epidemiological studies, which often used databases older than 2018, differing in CPG diagnosis and documentation (4–8, 10–16). One study defined moderate to severe CPG simply by whether or not systemic medication was necessary (6).

Furthermore, studies on CPG often report prevalence with no clear definition of it. It is often unclear whether or not these studies investigated point, 1-year, or lifetime prevalence. Most studies seem to investigate 1-year prevalences or cumulative prevalences and are register-based with unclear documentation of, e.g., controlled CPG (4–6, 8–11, 13, 14, 16). Incidence reports are few and far between.

Differing patient populations

To our knowledge there is no study investigating the prevalence of CPG in the general population, with studies mostly using general population estimates based on health insurance data. Western populations were the most investigated populations in the existing epidemiological studies and showed a mainly female predominance. However, sex differences still remain under-researched. Many studies did not report sex distribution. It remains to be investigated as to why Asian studies were the only ones reporting a male predominance. There is also a lack of data regarding ethnic differences. There are no studies from Africa, South America, or Oceania. The true global prevalence of CPG might be underestimated due to this (17).

View on new therapies

It is striking that an increasing number of epidemiological studies were conducted due to the rising awareness and interest of pharmaceutical companies in CPG. Studies are funded by these companies in light of the new therapies. This may shift the view on these new drugs and suggest them as a one-fits-all solution. It is important to follow the guideline (1) to optimize treatment, to search for the underlying aetiology of CPG, and not to use systemic treatments as a first-line therapy to minimize costs (when topical therapies may suffice as well).

Missing outcome measures

There is a lack of a set of comparable outcome measures, either patient- or physician-reported, especially regarding

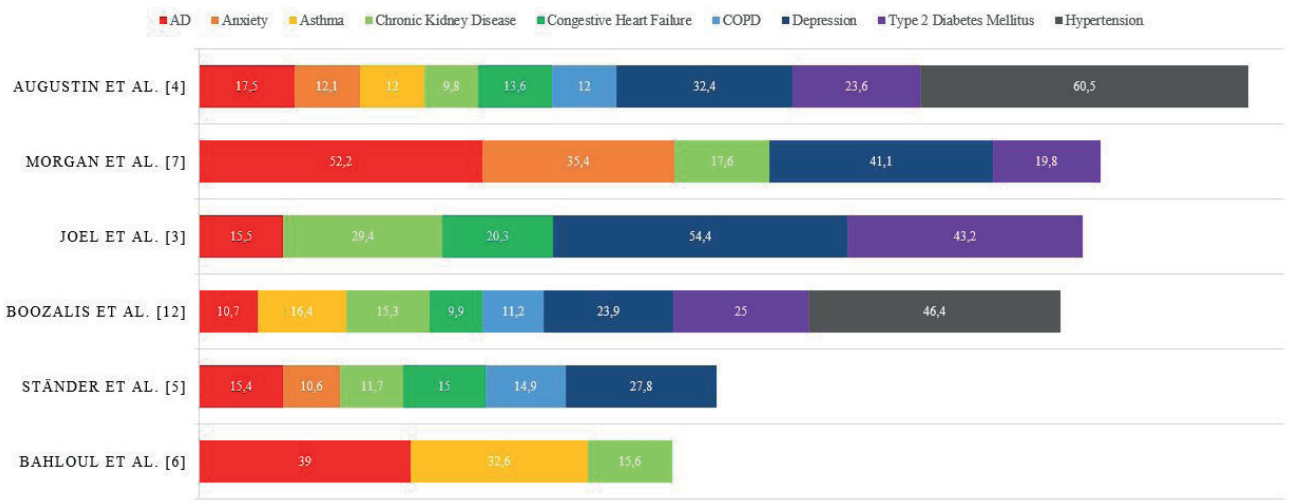

Fig. 1. Comorbidities of chronic prurigo (percentage).

the severity of CPG, the severity of itch in CPG and the psychological burden and Quality of Life (QoL) impairment of CPG. To our knowledge no validated instrument exists for assessing the psychological burden and QoL in CPG.

CONCLUSION

More light has been shed on the epidemiology of CPG in recent times. Nevertheless, there remains a lack of information, especially regarding ethnic and sex differences, but also demographic factors. This should be addressed by future studies.

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