

Abstract N°: 554**Management of prurigo nodularis by French dermatologists: a practice survey**

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Introduction & Objectives:

Prurigo nodularis (PN) is defined by the presence of pruritus for at least 6 weeks, a history and/or signs of repeated scratching, and multiple localized or generalized pruritic skin lesions (whitish or pinkish papules, nodules and/or plaques). Therapeutic options are limited.

Objectives:** to identify current management of prurigo nodularis in France

Materials & Methods:

We performed a practice survey in a French dermatologist's network. An online questionnaire was sent to all members between 16th June and 18th July 2022.

Results:

116 physicians answered the survey. Main answers are detailed in table 1. 85% knew the definition of prurigo nodularis, but 39% used the term PN for conditions not strictly corresponding to the definition. 60% knew PN was part of Th2 diseases. PN patients were mostly sent to dermatologists by a general practitioner (82%), a private practice dermatologist (38%) when responder worked in an hospital setting, by other medical specialists (23%). 75% of dermatologists declared that PN patients also came directly to their consultation. Almost all dermatologists performed laboratory exams in the initial screening, while 28% prescribed a thoraco-abdomino-pelvic CT. Severity of PN was assessed with DLQI (79%), BSA (73%), pruritus VAS (65%), sleep VAS (55%), duration of symptoms (53%), and number of nodules (52%). No predominant phototype was identified in PN patients by the dermatologists. 13% of private dermatologists declared to send PN patients to an hospital based dermatologist.

Conclusion:

The vast majority of dermatologists declared to manage PN patients. The Th2 nature of the disease is known by 2/3 of them. Screening for underlying medical condition is almost systematic. Medical management is mostly based on topical steroids, phototherapy and immunomodulatory treatment as methotrexate. Dupilumab is used off label by 81% of the dermatologists, because of favourable data from phase 3 randomized controlled trials in this indication.

	Dermatologists (n=116)
Median age (years)	45
Type of practice (%)	
- Hospital-based	41
- Private practice	59
Formation about PN the previous year (%)	25
Number of PN patients per month (%)	
- 0	4
- 1 to 5	76
- 6 to 10	15
- >10	5
Screening for underlying conditions (%)	
- Atopy	65
- Neoplasia	66
- Psychologic disorders	79
- Endocrinopathy	78
- Renal failure	89
- Hepatic disorders	78
- HIV	79
Treatment used (%)	
- Topical steroids	90
- Dupilumab	81
- Methotrexate	81
- Phototherapy	66
- Anti-histamines	40
- Topical tacrolimus	35
- Gabapentin/pregabalin	34
- Cyclosporin	19
- Intralesionnal injection of steroids	16
- Topical capsaicin	15
- Oral steroids	15
- Paroxetine	13
- Thalidomide	12
- JAK inhibitor	9



Abstract N°: 625**Short-term heat-inactivation of mechanically induced pruritus and pruritus attack in atopic dermatitis patients: Controlled prospective studies with a heat-application device**Joachim W. Fluhr^{*1}, Michael Hoffmann¹, Tim Mentel², Torsten Zuberbier¹¹Institut für Allergieforschung IFA / Institute of Allergology, Berlin, Germany,²Mibetec GmbH, Berlin, Germany**Introduction & Objectives:**

Itch is mediated by different itch-receptors. It has been reported that short term heat application modulates itch in atopic dermatitis patients.

The objective of this study was to evaluate the short-term heat-inactivation of mechanically induced pruritus on eczema in atopic dermatitis (AD) patients. Heat application (49°C) was compared to room temperature application with the same device (21°C). An additional AD cohort was tested with real-life applications during pruritic attacks.

Materials & Methods:

12 atopic dermatitis patients with symmetric active eczema lesions on both volar forearms were included in a prospective, randomized, controlled pilot study. Standardized mechanical itch was induced and heat application (49°C) for 5 seconds was compared to room temperature application. Subsequently we monitored itch intensity over 10 minutes on the eczema areas together with skin physiology parameters (barrier function and inflammation). In the real-life study we applied heat (49°C) for 5 seconds in 12 AD patients over 7 days. Itch intensity was assessed in both studies using a 10-point visual analogue scale.

Results:

We could show, after mechanically induced itch in AD-lesions, a reduction in itch intensity by heat application in a subset of the AD patients, while room temperature showed no relevant changes in itch intensity. The itch reduction was most prominent in the later phase (5-to-10-minutes) after application. In the real-life study we confirmed the itch reducing effect (after an initial itch-increase) below the initial itch intensity values. This itch-alleviating effect was not lost over repeated heat application (up to 20-times).

Conclusion:

We showed a reduction in itch intensity by 49°C heat-application in a standardized mechanically-induced itch model in eczema of AD patients. This was confirmed in a real-life study in pruritus of AD patients.



Abstract N°: 842**Serum Level of Protein- Bound Uraemic Toxins in Hemodialysis Patients with Chronic Kidney Disease- Associated Pruritus. What can we expect?**

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Introduction & Objectives:

Chronic kidney disease-associated pruritus (CKD-aP) affects about 40% of patients undergoing maintenance hemodialysis (HD) and is a burdensome dermatological symptom with multifactorial and not fully understood etiopathogenesis. Recently published studies suggested a great role of Protein-Bound Uraemic Toxins (PBUT) in the context of its cause. The study investigated the possible contribution of free and total Indoxyl Sulfate (IS) and p-Cresol Sulfate (PCS) to the pathogenesis of itch in patients undergoing maintenance hemodialysis.

Materials & Methods:

The study included 174 adult subjects. The participants were divided into three groups. Group A included 61 patients on maintenance HD with CKD-aP. Group B included 63 patients on maintenance HD not reporting CKD-aP and group C included 50 healthy controls. Numerical Rating Scale (NRS), UP-Dial, ItchyQoL and 4-Item Itch Questionnaire were in use as tools evaluating all aspects of pruritus. The serum levels of free and total IS and PCS concentrations were measured in all patients by using the Ultra Performance Liquid Chromatography System.

Results:

The study showed that free and total IS and PCS serum levels were significantly higher in HD patients ($p < 0.001$) in comparison to healthy controls. However, no significant difference in the serum level of IS or PCS was reported between the HD patients with CKD-aP and those not reporting pruritus. No correlation between serum IS or PCS levels and the severity of itch was found.

Conclusion:

Summarizing, so far carried out studies regarding the contribution of PBUT in CKD-aP etiopathogenesis are ambiguous and very limited. Our findings do not support earlier results about higher levels of IS and PCS in patients reporting CKD-aP. Further research will be needed to understand the cause of itch in CKD patients and to reevaluate previous discrepancies in this field.



Abstract N°: 923**line-field confocal optical coherence tomography for the differential diagnosis of papulo-keratotic skin disorders**Linda Tognetti¹, Francesca Falcinelli², Elisa Cinotti², Pietro Rubegni²¹Siena University Hospital, dermatology unit, Siena, Italy, ²Siena University Hospital

Introduction & Objectives: Line-field confocal optical coherence tomography (LC-OCT) is a new technology able to explore the skin *in vivo*, real time, up to 500µm depth, having a lateral field of view of 1200µm. The image resolution is comparable with that of reflectance confocal microscopy, but LC-OCT also allow to catch vertical images and to obtain a 3D reconstruction of the skin, like a “virtual biopsy”.

The differential diagnosis of pityriasis and porokeratotic skin disorders can be challenging, with consequent inadequate therapy and/or late recognition and management. Nevertheless, when specific dermoscopic clues are lacking, the differential diagnosis with other conditions can be hard at a clinical level.

We aimed to investigate the potentialities of the LC-OCT technique to individuate peculiar signs at epidermal level, among 12 porokeratosis variants and their possible clinical simulators.

Materials & Methods: The study was carried out in the Hospital of Siena, Brescia, Catania (Italy), St.Etienne (France) and Bruxelles (France). LC-OCT examination (DAMAE Medical®, Paris, France) was performed *in vivo* at lesional, perilesional and contralateral healthy sites, both in vertical and horizontal mode. To ensure the best visualization of the stratum corneum morphology, multiple examinations were carried out without pressure on lesional skin or by applying minimal pressure on perilesional skin. Software elaboration of these acquisitions allowed to obtain either 3D imaging close to a virtual skin scan.

A total of 25 patients with were examined affected by a specific porokeratosis variant, grouped into 3 main categories according to body distribution: 5 localized porokeratosis forms (Mibelli, punctate, linear, Zosteriform, palmoplantar), 5 disseminated porokeratosis forms (superficial, actinic, Eruptive bullous, Pruriginous, Follicular) and rare variants (hyperkeratotic porokeratosis, pruritic papular porokeratosis). As differential diagnosis, 25 patients with clinically similar conditions were examined, namely: annular granuloma, lichen striatus, lichen planus, acrocheratoelastoidosis, warts, popular syphiloderma - for the localized forms; lymphomatoid papulosis, pityriasis lichenoides chronica, stuccokeratosis, pityriasis rosea) - for the generalized forms; dermatofibroma and wart - for the rare forms.

Results:

The *in vivo* LC-OCT imaging combined with the 3D reconstruction allowed to detect the specific morphology of the peculiar epidermal alterations in the epidermis structure, in the upper and mid dermis and in the adnexa, with a perfect histologic match. Moreover, the *in vivo* scan modality gave further details of the conditions which were not visible in histologic slide due to preparation artifacts.

Conclusion: This painless technique could be very useful to rapidly orient the correct diagnosis in cases of ambiguous manifestations of papulo-keratotic, to spare unnecessary skin biopsy and scarring - especially at delicate body sites- and to possibly monitor the response to therapy.

Abstract N°: 1005

Symptoms of Neuropathic Itch: A Report From the Neuropathic Itch Patient Survey (NIRVE)

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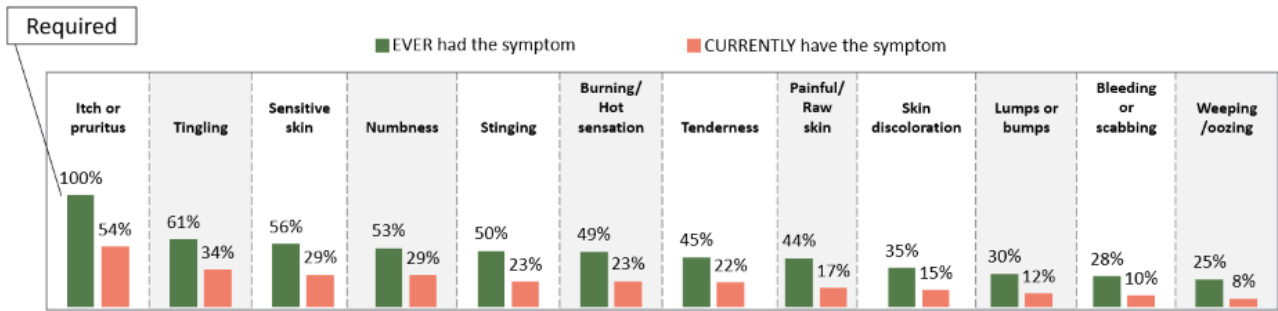
Introduction & Objectives: Neuropathic itch arises from damage to neurons and may occur with or without pain and other sensory symptoms. It is estimated that up to 8% of chronic itch arises from neuropathic origins, but epidemiological data are sparse. Likewise, data on patients' experiences with neuropathic itch are incredibly limited. In this international survey, we sought to identify patients suffering from neuropathic itch in an effort to better characterize their symptoms and impact on quality of life.

Materials & Methods: The Neuropathic Itch Patient Survey (NIRVE) was an online survey conducted globally from October 18, 2022, to December 2, 2022. Adult participants (age ≥ 18 years) experiencing neuropathic itch associated with a diagnosis of brachioradial pruritus, diabetic neuropathy/itch, notalgia paresthetica, post-herpetic neuralgia, prurigo nodularis, or small-fiber neuropathy were recruited from Canada, France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States. Eligible participants were asked to answer survey questions based upon the diagnosis they felt was most burdensome. Survey topics included questions on disease severity, disease and diagnostic history, symptom burden, treatment experience, and demographics. This report focuses on the symptom burden of the participants.

Results: A total of 93,371 respondents were screened. Of those who met study criteria and had an eligible diagnosis (2431), 971 respondents were excluded as they reported they had never experienced itch due to their neuropathic diagnosis. A total of 1460 participants were included in this analysis. The most common neuropathic itch condition reported was diabetic neuropathy, followed by small-fiber neuropathy, post-herpetic neuralgia, and notalgia paresthetica. The most common cutaneous manifestation experienced by participants (both ever and currently) was itch/pruritus, followed by tingling, sensitive skin, and numbness (see **Figure 1** for list and ranking of all manifestations on which respondents were polled). More than half of participants surveyed who were currently experiencing any given cutaneous manifestation reported it to be severe or extremely severe in the past week. While itch was experienced across all surveyed diagnoses, participants with diabetic neuropathy or small-fiber neuropathy were most likely to report they were currently suffering from other cutaneous manifestations (**Figure 2**). Of those participants currently experiencing cutaneous symptoms, 78% reported that their condition interfered with their sleep (**Figure 3**).

Conclusion: Findings of the NIRVE survey provide new insights into the symptom burden and impact on quality of life associated with neuropathic itch conditions. All participants had itch, but other skin sensations were also present. For each symptom that participants experienced, over half of participants ranked it as severe or extremely severe, with a very small minority reporting only mild symptoms. In addition, sleep interference from neuropathic conditions was common. Together, these data suggest that cutaneous symptoms related to neuropathic itch conditions are burdensome. Future studies and analyses should identify treatment goals for these patients.

Figure 1. Itch was the most common symptom for survey participants who experienced skin symptoms, followed by tingling, sensitive skin, and numbness



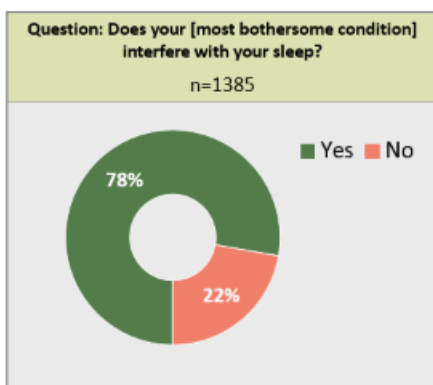
Includes all participants who experienced skin symptoms (n=1385).
 Question participants responded to: Which of the following skin symptoms have you ever had or currently have as a result of [your most bothersome condition]?

Figure 2. Participants with diabetic neuropathy or small-fiber neuropathy were more likely to report they were currently suffering from cutaneous symptoms other than itch

Symptoms CURRENTLY have	Diabetic neuropathy/itch	Small-fiber neuropathy	Postherpetic neuralgia/itch	Notalgia paresthetica	Prurigo nodularis	Brachioradial pruritus
	n=589	n=346	n=263	n=87	n=63	n=37
Itch or pruritus	57%	57%	51%	40%	41%	54%
Tingling	40%	40%	24%	16%	11%	14%
Sensitive skin	34%	33%	23%	14%	17%	19%
Numbness	39%	34%	10%	21%	10%	11%
Stinging	24%	24%	26%	9%	11%	8%
Burning or hot sensation	29%	29%	10%	15%	10%	11%
Tenderness	26%	28%	12%	11%	16%	8%
Painful or raw skin	21%	16%	10%	20%	17%	8%
Skin discoloration	19%	14%	13%	8%	17%	5%
Lumps or bumps	13%	12%	7%	8%	24%	11%
Bleeding or scabbing	13%	9%	6%	3%	14%	16%
Weeping or oozing	7%	11%	5%	3%	13%	8%

Includes all participants who experienced skin symptoms (n=1385).
 Question participants responded to: Which of the following skin symptoms have you ever had or currently have as a result of [your most bothersome condition]?

Figure 3. Greater than 75% of participants currently experiencing cutaneous symptoms reported that their condition interfered with sleep



Includes all participants who experienced skin symptoms (n=1385).



Abstract N°: 1870**Impact of an Online Continuing Medical Education Activity on the Knowledge, Competence and Confidence of Clinicians Who Care for Patients with Prurigo Nodularis**

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Introduction & Objectives:

Prurigo nodularis (PN) is a high-burden chronic inflammatory skin disease that requires lifelong therapeutic management and multidisciplinary care. The therapeutic landscape for PN is rapidly evolving to address unmet patient needs. It is important, yet challenging, for busy clinicians to keep abreast of key developments that may impact clinical practice and to be able to confidently use new treatments once available. We aimed to assess whether a purpose-specific continuing medical education (CME)-accredited activity improved clinician knowledge and competence in the management of PN.

Materials & Methods:

A faculty-led, CME-accredited panel discussion on PN was hosted on a free-to-access online medical education website. The activity comprised three 10-minute educational videos and met specific learning objectives based on gaps in clinician education that were identified through a literature analysis and expert insights. The impact of the education was assessed using Moore's expanded outcomes framework Levels 1–4 (participation, satisfaction, knowledge and competence, respectively). Intent to change practice, confidence levels and the need for additional education were also assessed. Level 1 data were captured using Google Analytics; Level 2–4 data were captured using pre- and post-activity questionnaires administered by an independent third party and analysed by the authors. The sample size was 200 for the Level 2–4 analysis; the margin of error was calculated as 7% based on a standard confidence interval of 95%.

Results:

Within 12 weeks of launch, 9,295 participants from 33 countries engaged in the activity, for an average duration of 05:11 minutes. The rate of satisfaction (Moore's Level 2) among learners was high (88%). Overall improvements were reported from baseline to follow-up in declarative knowledge (15%), procedural knowledge (37%) and competence (15%) (Moore's Levels 3a, 3b and 4, respectively). After the education there was a significant ($p=0.030$) increase from baseline in the proportion of participants answering questions correctly; the increase was seen across all six questions posed. The largest improvements were observed for questions relating to treatment options and patient-reported outcome measures for PN (procedural and declarative knowledge, respectively). Following the education, there was a 7% increase in the proportion of learners who felt moderately/extremely confident treating PN compared with baseline. Overall, 60% of learners planned to change their practice following participation and 22% indicated further education would be beneficial.

Conclusion:

This expert-led, web-based CME-accredited panel discussion led to improvements in clinician knowledge and competence surrounding the management of PN. In an increasingly digital age and given the busy schedules of

clinicians, these findings show the value of video-based online education as one tool for clinicians to keep up-to-date with a rapidly changing treatment landscape.

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Abstract N°: 1966**Study of cases of allergic contact dermatitis to propylene glycol (PG) in the last 15 years**

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Introduction & Objectives:

Propylene-glycol (PG) is used as a vehicle in a wide variety of products, including moisturizers, lotions, shampoos, deodorants, skin care products, and topical and oral medications. Due to its irritative nature, there has been a great deal of discussion in the last 40 years about the concentration at which it should be tested to avoid false positives and make diagnoses profitable. Since 2013, the American Contact Dermatitis Society recommends testing 30% and 100% together. Since 2022, GEIDAC has introduced this allergen into the standard battery at these concentrations, previously it was an allergen within specific batteries, being tested at lower concentrations.

Materials & Methods:

Retrospective study of a series of cases of patients with a diagnosis of contact dermatitis to propylene glycol according to the database of our tertiary hospital. The aims of this study were known the number of cases of DAC to propylene glycol 2007-2022, the clinical presentation, study of sources of awareness, assess the number of cases based on the concentration tested, known the temporal distribution and associations with other allergens. Other variables were sex, age, location, clinic, relevance and origin.

Results and Conclusion:

PG is a ubiquitous vehicle in a multitude of cosmetic and health products. That is why the main source of sensitization is iatrogenic. Since the last century there has been controversy in the concentration to be tested. The latest recommendations are to test simultaneously at 30% and 100%. In our work we have observed that when testing at 20% there is already a great difference in cases diagnosed from CAD to PG than when testing at lower concentrations, and in this last year testing at 30% and 100%, more cases have been diagnosed than in the rest. from previous years (with a 100% correlation with both concentrations), so it is expected that the number of diagnosed cases will begin to increase significantly. Another important aspect is the frequent association with other allergens, highlighting the fragrance and balsam of Peru. It is worth noting the large presence of this substance in topical corticosteroids, producing recalcitrant cases and making subsequent management difficult. Other notable products are Zovirax® cream, Anso® hemorrhoid cream, a multitude of ulcer cure products, and minoxidil lotions. That is why most cases have been on previous dermatoses (ulcers, herpes, burns...) with great clinical variability and most frequently located on the legs followed by the face.

PG is an allergen to take into account in cases of cosmetic and, above all, iatrogenic eczema. We must remember its great presence in topical corticosteroids, complicating diagnosis and subsequent treatment. The longer-term results of the change in concentration to be tested in the patches and the new addition to the GEIDAC standard battery are pending.

Abstract N°: 2210**Acceptance and usability of pruritus assessment instruments in dermatological offices**

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Introduction & Objectives:

Pruritus is a highly burdensome symptom that occurs in many prevalent dermatoses. Therefore, assessment of pruritus with valid patient-reported outcomes (PROs) and consideration of the symptom course is an important part of the daily routine in dermatological offices. However, instruments are not well established in dermatological offices. With this study, we aimed to identify the use and acceptability of a range of PROs and clinical scores from the patients' and physicians' point of view.

Materials & Methods:

We included patients with atopic dermatitis, psoriasis vulgaris, chronic spontaneous urticaria and chronic prurigo from 10 dermatological offices. Patients were asked to complete several PROs comprising the itch numerical rating scale (NRS), the dermatological life quality index (DLQI), the Itch-controlled days questionnaire (ItchCD), the 5-pruritus related life quality questionnaire (5PLQ) and the Euroqol 5 Days (Eq5d). Patients then rated the relevance and the difficulty of completion on a scale from 0-10. The length of the respective PROs was rated either as too short, right or too long. Doctors rated the severity of the patient's condition with clinical scores such as the psoriasis area and severity index (PASI), the eczema area and severity index (EASI), the global investigator assessment of chronic prurigo (CPG-IGA) and the urticaria activity (UAS) score. The usefulness and feasibility of every PRO and clinical score was rated by physicians on a scale from 0-10. Group comparisons were conducted with Mann-Whitney-Tests or Kruskal-Wallis-Tests and correlations with Spearman's rho.

Results:

All PROs were considered as relevant by the patients with median scores of $\geq 8/10$. The difficulty was regarded as low with median scores of 0. The length was considered to be adequate in 89-95% of patients.

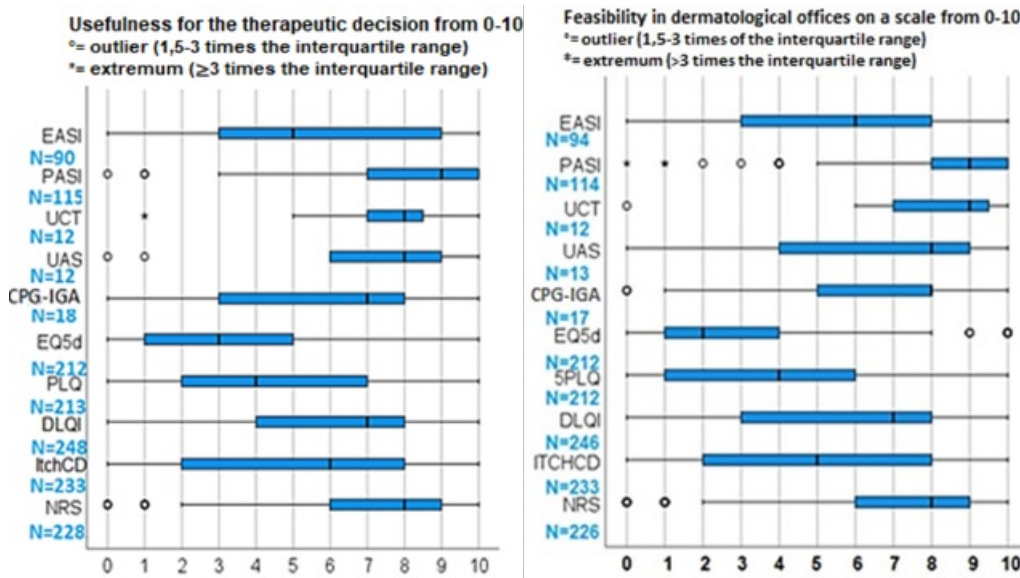


Diagram 1: Usefulness from the doctors' point of view Diagram 2: Feasibility from the doctors' viewpoint

Physicians in dermatological offices reported a high usefulness for the therapeutic decision for most of the PROs and scores (Median values: PASI 9, NRS 8, UCT 8, UAS 8, DLQI 7, CPG-IGA 7, ItchCD 6, EASI 5, 5PLQ 4, Eq5d 3). The feasibility was regarded as high for most of the PROs and scores (Median values: PASI 9, UCT 9, NRS 8, UAS 8, CPG-IGA 8, DLQI 7, EASI 6, ItchCD 5, 5PLQ4, Eq5d 2).

Conclusion:

Patients in dermatological offices consider PROs as relevant and practical, there were no difficulties filling them in. Office dermatologists consider most of the PROs and scores as clinically relevant. Established scores and PROs (DLQI, PASI, NRS, UAS, UCT, EASI) were more widely accepted among the doctors while new PROs (ItchCD, 5PLQ, Eq5d) were regarded as not as useful and less feasible. The most practical measure for pruritus appears to be the NRS, whereas other more complex PROs for pruritus (ItchCD, 5PLQ, EQ5d) are not viewed as useful as the NRS from the physicians' points of view. Out of the clinical scores the EASI was contemplated as the least feasible and least useful for the therapeutic decision.



Abstract N°: 2232**Prurigo pigmentosa in association with ketogenic diet treated successfully with doxycycline**Khaloud Alhatmi*¹¹OMSB, Dermatology, Muscat, Oman**Introduction & Objectives:**

Prurigo pigmentosa is a rare inflammatory skin condition characterized by a recurrent pruritic rash with reticulated hyperpigmentation. It has been reported in association with systemic conditions such as diabetes mellitus, ketosis, pregnancy, and fasting or dieting.

Here we describe prurigo pigmentosa associated with ketogenic diet, in an Omani female, treated successfully with doxycycline.

Materials & Methods:

An 18-years-old Omani female with background of menorrhagia and iron deficiency on oral iron supplements, presented with 1-month history of intensely pruritic eruption over the posterior neck, lower back, and chest, progressed gradually to involve the axillae, lower abdomen, and supra-pubic area. There were no scalp, nails, or mucus membranes involvement, with no associated systemic symptoms. The eruption was preceded by 2 weeks history of ketogenic diet. The rash persisted despite diet discontinuation.

Skin examination revealed symmetrically distributed, confluent reticulated erythematous scaly papules on the upper and lower back, abdomen, chest, and axillae.

Skin biopsy showed necrotic pale epidermis, basal layer vacuolization with interface lymphocytic infiltrate. The dermis shows superficial perivascular lymphocytic infiltrate, admixed with occasional neutrophils, focal extravasated RBCs and pigment incontinence. The biopsy result was consistent with the diagnosis of prurigo pigmentosa. A course of oral Doxycycline 100 mg once daily for 4 weeks along with oral antihistamine were prescribed, and a progressive resolution of the eruption leaving reticular brownish pigmentation were noted after 1 week.

Results:

The history of ketogenic diet with typical clinical picture along with pathology findings all pointed toward the diagnosis of prurigo pigmentosa which was further supported by the complete resolution after the treatment with doxycycline.

Conclusion:

Keto diet is associated with prurigo pigmentosa and Doxycycline is an effective treatment of this condition.



Abstract N°: 2347**Itch Severity and Treatment Satisfaction in Patients with Prurigo Nodularis (PN)- Results from the PN-patient Reported burden of sickness (PN-TREK) Study**

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Introduction & Objectives:

Prurigo nodularis (PN) is a chronic skin disease characterized by the presence of extremely itchy skin lesions. Severe and persistent itch is a hallmark symptom of PN, which imposes a significant burden on patients' quality of life and mental health. Prior to dupilumab approval, PN was mainly treated with off-label, non-biologic therapies with limited published data on patient satisfaction with these treatments. This study aimed to evaluate the patient-reported itch severity and treatment satisfaction with non-biologic therapies in patients with PN.

Materials & Methods:

This cross-sectional survey was conducted in adult (aged ≥ 18 years) patients with PN in the US with a diagnosis of PN for ≥ 3 months, ≥ 6 nodules, and itch of any level, in the 7 days preceding the survey with signs of repeated scratching, picking, or rubbing. Patients who were enrolled in a clinical trial or had taken dupilumab for the treatment of any condition, over the past 6 months were excluded from the study. The survey collected data on patient demographics and clinical characteristics, treatment use for PN (over past 4 weeks), treatment satisfaction, and severity of itch. The severity of itch in the past week was assessed using the worst itch-numeric rating scale (WI-NRS) and the average itch-NRS. The 5-D itch scale was used to further assess patient's itch. All data were summarized descriptively. Patients were stratified into itch-severity subgroups based on WI-NRS scores: 0-2, 3-6 and ≥ 7 . Between-group comparisons were performed using T-tests, Chi-square tests and Fisher's exact tests.

Results:

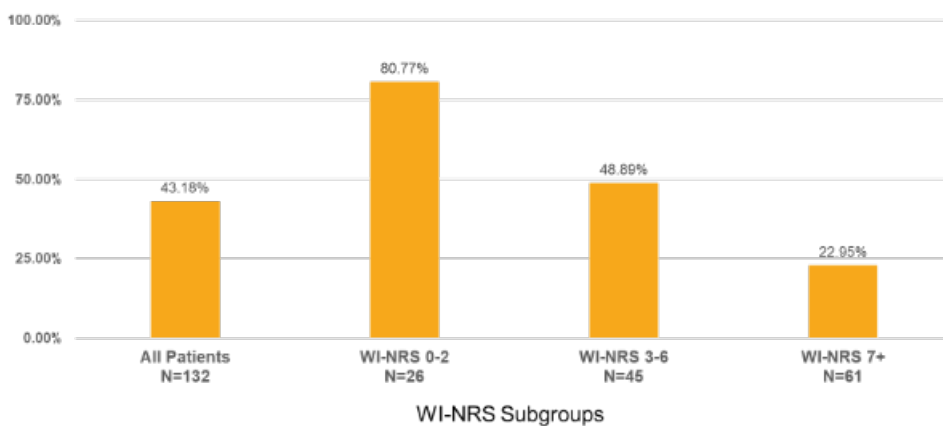
In total, 132 patients with PN participated in the survey (mean age [standard deviation, SD]: 51.0 [9.6] years; 59% female; mean [SD] time since diagnosis: 4.1 [5.1] years). Most survey patients reported WI-NRS scores of 3-6 (34%) and ≥ 7 (46%) in the past week. The mean (SD) average itch-NRS scores were 2.5 (1.6), 4.3 (2.0), and 7.4 (2.0) in patients with WI-NRS score of 0-2, 3-6 and ≥ 7 , respectively. Overall, 45% of all patients reported itch duration ≥ 12 hours/day and itch duration generally increased with increasing WI-NRS category (≥ 12 hours/day of itch: 11.54%, 35.56% and 65.57% in patients with WI-NRS score of 0-2, 3-6 and ≥ 7 , respectively). Itch was most frequently reported in the lower legs (54.55%), forearms (52.27%), upper arms (46.97%), and head/scalp (40.91%) in the overall patient population. Similar observations were reported across the itch-severity subgroups. PN treatments were used by 99.24% of the patients in the 4 weeks prior to the survey; 90.15% of patients reported use of topical therapies. Patients with WI-NRS score ≥ 7 (vs. patients with WI-NRS score 0-2) reported more frequent use of oral antihistamines (50.82% vs. 3.85%, $p < 0.05$) and opioid antagonists (32.79% vs 0%, $p < 0.05$). Among the survey population, 43.18% patients reported being satisfied with their current treatment. Notably, 22.95% patients with WI-NRS score ≥ 7 and 48.89% with WI-NRS score of 3-6 reported they were satisfied with their current treatment (figure 1).

Conclusion:

The burden of itch is significant in patients with PN and less than 50% of patients on non-biologic therapies report

being satisfied with their current treatment. This provides important information for physicians to consider when assessing patients.

Figure 1. Proportion of patients reporting they are satisfied with current treatments



WI-NRS: Worst itch- numeric rating scale

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Abstract N°: 2709**The Burden of Disease for Prurigo Nodularis in a Commercially and Medicare-insured U.S. Population: A Retrospective Cohort Study**

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Introduction & Objectives: Prurigo nodularis (PN) is a rare, debilitating, chronic neuroimmune skin condition that frequently leads to serious impairments in quality of life. Until recently, there were no targeted therapies approved for PN in the US, making disease management a challenge for clinicians and patients. This study evaluated the real-world all-cause and PN-related economic burden and treatment characteristics of U.S. patients with PN.

Materials & Methods: Patients were identified using MarketScan Commercial and Medicare Supplemental claims databases. PN patients were required to have ≥ 2 diagnoses for PN (>30 days apart) from 01.Oct.2015 to 31.Dec.2018, continuous enrollment for 24 months prior to and 12 months following their first diagnosis date, and no evidence of a PN diagnosis in the baseline period. Treatment characteristics, all-cause and PN-related healthcare resource utilization and costs were calculated over the 12-month post-index period. Costs were adjusted to 2019 U.S. dollars.

Results: For the 4,195 PN patients identified, mean age was 53.7 years, 55% were female, 83% had Commercial insurance. Comorbid conditions observed in the 12-month pre-index period included allergic rhinitis (13%), asthma (9%), and atopic dermatitis (6%). All-cause and PN-related outpatient utilization were high in the first 12-months post-index, with outpatient office visits (>99% & 95%, all causes and PN-related respectively), other outpatient services (99% & 73%) and outpatient specialty pharmacy (97% & 87%). PN patients had a mean(SD) number of 7.9(10.1) PN-related pharmacy claims comprised predominantly of steroid, antipruritic, antidepressant, antihistamine, and anticonvulsant prescriptions. Of PN patients, 35% had a PN-related procedure occurring a mean (SD) 56.6(94.5) days after index date. Mean(SD) PN-related healthcare costs (\$1,137[\$2,821]) accounted for 5% of all-cause total healthcare costs (\$21,662[\$60,564]) in the 12-month follow-up.

Conclusion: Patients with PN incurred >\$26,600 in total healthcare costs, with >97% of patients had an outpatient office visit, other outpatient service, or outpatient pharmacy prescription in the first 12-months following initial PN diagnosis. More targeted therapy options may improve clinical management of PN among patients in the U.S.



Abstract N°: 2712

Oral Nalbuphine Extended-Release Was Well Tolerated Over 52 Weeks of Treatment During the Open-Label Extension of the PRISM Study

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¹Ruprecht-Karls University, Heidelberg, Germany, ²Paddington Testing Company, Philadelphia, United States, ³Wroclaw Medical University, Wroclaw, Poland, ⁴University of Rzeszow, Rzeszow, Poland, ⁵University Hospitals Cleveland Medical Center, Cleveland, United States, ⁶Trevi Therapeutics, , New Haven, United States, ⁷Medical University of Graz, Graz, Austria, ⁸Münster University Hospital, Münster, Germany

Introduction & Objectives: Prurigo nodularis (PN) is a chronic skin disease characterized by intense pruritus and raised nodular lesions, papules, or plaques induced by chronic scratching behavior. Peripheral and central opioid transmitter systems involving κ - and μ -opioid receptors have been implicated in the etiology of itch and scratching behavior. There are no approved oral treatment options for PN. In the phase 2b/3 PRISM study (NCT03497975), the dual acting κ -opioid agonist/ μ -opioid antagonist nalbuphine extended-release (NAL ER) met its primary endpoint: after 14 weeks, 24.7% of patients with PN receiving NAL ER versus 13.9% receiving placebo ($P=0.0157$) had a ≥ 4 -point reduction in the Worst-Itch Numerical Rating Scale (WI-NRS). The long-term safety and tolerability of NAL ER was to be assessed during the open-label extension (OLE) of the PRISM study.

Materials & Methods: PRISM was a double-blind, placebo-controlled study of patients with PN with ≥ 10 nodules (on ≥ 2 body areas) and WI-NRS scores ≥ 7 (on a scale from 0 = no itch to 10 = worst imaginable itch) who were randomly assigned to oral NAL ER 162 mg or placebo twice daily for 14 weeks. Following the double-blind period, patients could enter the OLE comprising up to 38 weeks of treatment with NAL ER 162 mg twice daily after a 2-week titration period.

Results: A total of 247 patients completed the double-blind period and entered the OLE. During the OLE, 75.3% of patients experienced an adverse event and 13.4% discontinued due to an adverse event. Treatment-related adverse events occurred in 37.7% of patients; the most common were nausea (15.0%), dizziness (10.9%), vomiting (6.5%), somnolence (5.7%), and fatigue (5.7%). Serious adverse events occurred in 5.3% of patients; however, only 0.8% of patients had a serious adverse event considered to be treatment related. Fewer patients treated with NAL ER for up to 52 weeks (inclusive of 14 weeks during the double-blind study period) than those patients who initiated NAL ER at the start of the OLE had treatment-related adverse events and discontinuations due to adverse events during the OLE. In addition, during the first 2 weeks of the OLE (in which the dose of NAL ER was titrated up to 162 mg twice daily), a greater proportion of patients who initiated NAL ER in the OLE experienced treatment-related adverse events than those who were previously treated with NAL ER in the double-blind period. This trend paralleled the results during the first 2 weeks of treatment in patients who received NAL ER during the initial 14-week treatment period.

Conclusion: The safety profile of NAL ER during the OLE was similar to that observed in the double-blind portion of the study, including during the required 2-week NAL ER dose titration period; no new adverse events or safety signals were identified. Overall, NAL ER had an acceptable safety profile with chronic administration up to 52 weeks.

Abstract N°: 2746**Disease Burden and Correlation Analysis of Patient-Reported Measures of Disease Severity in Prurigo Nodularis (PN)-Results from the PN-paTient Reported burdEn of sicKness (PN-TREK) Study**

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Introduction & Objectives:

Prurigo nodularis (PN) is a chronic skin disease, characterized by intensely itchy nodules that have a significant negative impact on the patients' quality of life (QoL) and psychological wellbeing. Multiple patient-reported outcome (PRO) measures are used to assess symptoms, burden, and QoL in patients with PN, however there is no clear guidance on how to best assess disease severity in patients with PN. This study aimed to evaluate the disease burden of PN and to ascertain the correlation between different PRO measures in patients with PN.

Materials & Methods:

This cross-sectional patient survey was conducted in patients with PN in the US. Adult patients (aged ≥ 18 years) were eligible for participation in the survey, if they had a self-reported diagnosis of PN for ≥ 3 months, ≥ 6 nodules, and itch of any level, in the 7 days preceding the survey with signs of repeated scratching, picking or rubbing. The survey collected data on patient demographics and clinical characteristics, history of treatments for PN (over the past 4 weeks), and PN disease burden in terms of severity, itch burden, and QoL. PRO measures like worst itch numeric rating scale (WI-NRS, assessed over the past week), average itch-NRS (assessed over the past week), patient global impression of severity (PGIS, assessed over the past week), patient health status (assessed on the day of the survey), number of PN lesions, and dermatology life quality index (DLQI) were used to assess disease burden. PRO measures were scored according to the established algorithms for the total score and domain scores, wherever applicable. All data were summarized descriptively. The correlations between different PRO measures were assessed using the Spearman (between continuous variables) and Kendall (between categorical variables or between a categorical and continuous variable) correlation analysis.

Results:

A total of 132 patients with PN participated in the survey (mean age [standard deviation, SD]: 51.0 [9.6] years; 59%, females; mean [SD] time since diagnosis: 4.1 [5.1] years). Among the survey population, asthma (17.42%) and atopic dermatitis (15.15%) were the most commonly reported atopic comorbidities, whereas anxiety (25.76%) and cardiovascular disease (22.73%) were the most commonly reported non-atopic comorbidities. Most patients (90.15%) reported use of a topical therapy. Antihistamines (31.82%), oral steroids (29.55%), antidepressants (24.24%), opioid antagonists (19.70%), and immunosuppressants (12.12%) were the most commonly reported systemic therapies. Most patients reported moderate-to-very severe disease (62.12%) per PGIS, and moderate-to-extremely large impact on QoL (65.90%) per DLQI. Scores of 7 or greater for WI-NRS and average itch-NRS were reported by 46.21% and 37.12% patients, respectively. WI-NRS, PGIS, average itch-NRS, DLQI and PGA were strongly correlated ($r \geq 0.5$) with each other, while number of nodules had weak correlations ($r < 0.3$) with all PRO measures except PGIS ($r = 0.403$) and patient health status ($r = 0.327$) (table 1).

Conclusion:

The survey data revealed a high disease burden in patients with PN in the US. The correlation analysis showed that

number of nodules does not correlate strongly with other PRO measures, suggesting that number of nodules alone may not adequately describe disease burden or severity in patients with PN. All aspects of a patient's disease should be taken into consideration when assessing patients with PN.

Table 1. Correlation coefficients for patient-reported outcome measures

	Number of nodules	PGIS	PGA	WI-NRS ^a	Average itch NRS ^a	DLQI Total score ^a
Number of nodules	1	0.403	0.327	0.285	0.287	0.259
PGIS	-	1	0.697	0.645	0.596	0.558
PGA	-	-	1	0.607	0.598	0.542
WI-NRS ^a	-	-	-	1	0.830	0.699
Average itch NRS ^a	-	-	-	-	1	0.700
DLQI Total score ^a	-	-	-	-	-	1

NRS: numeric rating scale; PGIS: patient global impression of severity; WI-NRS: worst itch-NRS; DLQI: dermatology life quality index; PGA: patient global assessment.

^a continuous variable

4 categories for number of nodules: 6-9, 20-49, 50-100, 100+; 5 categories for PGIS: Minimal, Mild, Moderate, Severe, Very severe; 5 categories for patient health status: Poor, Fair, Good, Very good, Excellent.

$r < 0.3$: weak correlation; $r \geq 0.3$ to 0.5 : moderate correlation; $r \geq 0.5$: strong correlation.



Abstract N°: 2979**Psychometric analyses of severity stages of chronic prurigo**Claudia Zeidler^{*1}, Sonja Ständer¹¹University Hospital Münster, Department of Dermatology and Center for Chronic Pruritus, Münster, Germany**Psychometric analyses of severity stages of chronic prurigo****C. Zeidler, S. Ständer****Introduction:**

Chronic prurigo (CPG) is a pruritic, neuroinflammatory skin disease characterized by the presence of multiple pruriginous lesions. Previous psychometric analyses showed the presence of moderate to severe pruritus intensity and a considerable impairment of quality of life.

The classification of chronic prurigo into severity stages is not only important for the treatment decision and evaluation of the course over time, but also in order to define inclusion criteria in the context of randomized clinical trials. Despite its importance, there have been no study analysing the possible link between objective measurements of chronic prurigo severity and patient-reported outcomes what is the aim of this study

Materials & Methods:

Skin findings were assessed by the Prurigo Activity and Severity Score (PAS). Classification of severity was based on the Investigator's Global Assessment (IGA) for CPG. Pruritus intensity was assessed by the numeric rating scale (NRS); quality of life by Dermatology Life Quality Index (DLQI) and ItchyQoL.

Results:

Data sets of 418 patients (64.4 ± 12.6 years old, 60% female) diagnosed with CPG have been analysed. The severity stage of CPG correlated significantly with pruritus intensity ($r=0.308$) and quality-of-life impairment (DLQI: kruskal-wallis= 24.277; ItchyQoL: kruskal-wallis= 12,652). Patients with higher severity stages showed a significantly higher PAS (kruskal-wallis: 191.301)

Analyses of the time course under guideline-guided therapy showed that along with decrease of pruritus intensity the severity levels of CPG improved.

Conclusion:

The classification of chronic prurigo into severity stages via the IGA-CPG allows an objectively evaluation of treatment success and can be used as a criterion for systemic therapy as well as inclusion criteria for clinical trials.

Abstract N°: 3154**Effectiveness of narrow band ultraviolet light in chronic kidney disease associated pruritus**

Mounia Sidki¹, Maryem Aboudourib¹, Imane Shabi², Mariam Chettati², Wafaa Fadil², Inass Laouad², Hocar Ouafa¹, Said Amal¹

¹Department of Dermatology and Venerology, Mohammed VI University Hospital, ²Department of Nephrology, Mohammed VI University Hospital

Introduction & Objectives:

Uremic pruritus is a common and burdensome symptom afflicting patients with advanced chronic kidney disease. To date, the mechanism remains poorly understood and therapeutic options are limited and unsatisfactory. Over the last 40 years, ultraviolet phototherapy was used for treatment of uremic pruritus all over the world especially for patients who did not respond to medical therapy.

We report our experience with narrow band ultraviolet B (NB-UVB) light in management of uremic pruritus in dialysis patients.

Materials & Methods:

Over a period of 7 years (2015-2022), we recruited 38 dialysis patients with uremic pruritus who were able to receive phototherapy treatment. They were all unresponsive to the conventional treatment (emollients and antihistamine). They had sessions of NB-UVB light (311 nm, TL01) twice per week.

Results:

Average age of patients was 56 years (16-80), 63.2% were female and 36.8% male. Median duration of pruritus was 4.7 years (1month - 17years), and of dialysis was 8.4 years (3months - 25 years). Pruritus was intermittent and diffuse in most of cases, localized to the arteriovenous fistula site in two cases, and exacerbated by heat in all cases. Itch intensity was evaluated with numerical rating scale (0-10), based on the worst level of itching in the past 2 weeks, and showed a moderate average score (5/10). Xerosis was found in 63%, and scratch lesions such as excoriation in 34%. NB-UVB phototherapy was used twice per week in nonconsecutive days, with protection of genital area and also eyes using UVB-blocking goggles. Initial dose was 0.4 joule/cm² and further doses were introduced according to the erythema response until a maximum of 2 joule/cm². No sunburn, hyperpigmentation or blistering was noted. Emollients was maintained in patients with xerosis. Average number of sessions was 13 (6-24), and reduction of itch intensity was observed starting from the 6th session. Total improvement was obtained in the end of treatment duration, excepting for 3 patients who required additional sessions. One patient had recurrence 3 years later.

Conclusion:

Approximately 40% of patients with end-stage renal disease experience chronic pruritus. It is associated with poor quality of life, anxiety, sleep disturbance, and increased mortality. The multifactorial pathophysiology of uremic pruritus is not well understood. Established treatment options are limited. They include many topical and systemic therapies, but gamma-linolenic acid and UVB have shown the most effectiveness. UVB inhibits T helper-1 and T helper-2-mediated immune responses and modulates interleukin production. In 1977, Gilchrist et al. made an important controlled clinical trial that demonstrated the efficacy of UVB light in uremic pruritus. Many studies later supported these results. The effectiveness of NB-UVB would be comparable to broadband UVB, but with a

better tolerance and fewer sessions. Five to 24 sessions of 2 joule/cm² are sufficient. UVB may be offered in patients with refractory pruritus without many of the side-effects and risks associated with systemic medications. However, this intervention may be limited by patient's inability to access a center where phototherapy is offered. Managing uremic pruritus is a challenge. NB-UVB phototherapy seems to be a safe and effective choice, and should be considered as an option especially when medical treatment was unsuccessful. Long term skin hydration should be also highly recommended.

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Abstract N°: 3254**Efficacy of Concentrated Heat for Treatment of Insect Bites: Results of a Real-World Study**Martin Metz¹, Manuel Elberskirch², Christof Reuter², Lukas Liedtke², Marcus Maurer¹¹Charité - Universitätsmedizin Berlin, Institute of Allergology, Berlin, Germany, ²Kamedi GmbH, Karlsruhe, Germany**Introduction & Objectives:**

Insect bites leave hardly anyone undisturbed. Using concentrated heat for relief of itch, pain and swelling seems to be a promising approach, however, the scientific basis for efficacy of hyperthermia treatment is sparse. Here, we report the results of a large real-world study using a randomized control group to assess the efficacy of hyperthermia on insect bites in real world conditions, especially considering mosquito bites as the most frequent bites.

Materials & Methods:

The study was conducted in a decentralized manner via the smartphone controlled medical device heat it®. The application that controls the device was accompanied by additional questionnaires, that collected data related to insect bites, such as itch and pain intensity.

Results:

Analysis of the over 12,000 collected treated insect bites generated by around 1,750 participants (42% female, 39 ± 13 years) showed significant inhibition of itch and pain for all investigated insect species (mosquitoes, horseflies, bees and wasps). Mosquito bite-induced itch was reduced by 57% within the first minute and by 81% five to ten minutes after treatment, and the overall reduction of itch and pain was more pronounced as in the control group.

Conclusion:

Taken together, the results indicate that the local application of heat relieves symptoms of insect bites.

Abstract N°: 3575

Exploring differences in clinical and disease characteristics, based on Fitzpatrick skin type, in patients with prurigo nodularis

Hannah Brown¹, Amber King¹, Georgia Giannakopoulou¹, Denise Baldock¹

¹Ipsos, United Kingdom

Introduction & Objectives:

Whilst understanding of disease pathogenesis is still evolving, prurigo nodularis (PN) has been found to disproportionately affect patients with skin of colour¹. The objective of this study was to explore differences in clinical and disease characteristics among PN patients in the US based on their Fitzpatrick Skin Type.

Materials & Methods:

A multi-centre online medical chart review study of patients with PN was conducted in December 2022 among US dermatologists. Physicians were screened for practice duration, patient volume and responsibility in treatment decisions. Charts of patients with PN were included in the analysis. Patients were grouped into three categories based on Fitzpatrick Skin Type: group 1 (pale/fair type I & II), group 2 (olive/moderate brown type III & IV) and group 3 (dark brown/black type V & VI).

Results:

A total of n=70 physicians reported on 199 PN patient charts; 91 presented in group 1, 79 in group 2 and 28 in group 3 (*note: small base <30, so findings must be viewed qualitatively*) When analysing clinical characteristics, the patients in group 3 were more likely to be deemed as severe at diagnosis. Accompanying this were higher citations of ‘skin lesions’ and ‘scarring of skin’ as current symptoms experienced by patients, along with higher BSA scores in comparison to group 1 and 2 (see table 1). The characteristics cited are also consistently lower among reported patients in group 2.

Table 1. Recorded clinical and disease characteristics of reported patients

	Fitzpatrick Skin Type		
	Group 1 (n=91)	Group 2 (n=79)	Group 3 (n=28)
% cited as ‘severe’ at diagnosis	32%	25%	46%
% cited ‘skin lesions’ as a symptom	57%	46%	82%
% cited ‘scarring of skin’ as a symptom	37%	32%	54%
Average BSA Score	9.2	7.5	12.9

(Please note: base for group 3 is <30 so findings should be taken qualitatively)

When considering lifestyle-attributed characteristics, the patients in group 2 were less likely to have ‘limited social activity’, ‘mental health complications’ and ‘challenges sleeping’ cited as symptoms of their PN, corroborating a less severe clinical profile. Reports of ‘limited social activity’ are more prevalent in group 3 (28.6%), whilst ‘challenges sleeping’ and ‘mental health complications’ are reported at similar rates in groups 1 and 3 (see table 2).

Table 2. Recorded symptoms of PN among reported patients

	Fitzpatrick Skin Type		
	Group 1 (n=91)	Group 2 (n=79)	Group 3 (n=28)
% cited 'limited social activity' as a symptom	11%	8%	29%
% cited 'challenges sleeping' as a symptom	25%	14%	25%
% cited 'mental health complications' as a symptom	11%	3%	11%

(Please note: base for group 3 is <30 so findings should be taken qualitatively)

Conclusion:

Comparisons in this study cohort suggest a potential alignment between the clinical presentation and lifestyle impact of PN, depending on Fitzpatrick skin type. Findings indicate PN patients who present with group 3 skin type experience more severe clinical characteristics of PN and are indicatively more likely to record lifestyle impact. With greater awareness and understanding of these differences likely to influence patient outcomes in this condition, further research may be warranted to better understand factors underpinning these disparities.

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Abstract N°: 3615**Aquagenic pruritus induced by erythrocytosis secondary to testosterone**

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¹Hospital Central do Exército, Dermatologia Tropical, Rio de Janeiro, Brazil

Introduction & Objectives:

Pruritus is a common and distressing symptom of many diseases. Aquagenic pruritus (AP) is a sporadic debilitating condition in which patients experience intense itching, paresthesia, stinging or burning sensations without visible skin lesions. Although AP can be considered idiopathic, some of the cases are associated to systemic disorders such as polycythemia vera. This report aims to describe a 31-year-old healthy man with aquagenic pruritus potentially associated to testosterone-induced erythrocytosis and present the clinical and laboratorial findings that uphold this association.

Materials & Methods:

The patient was evaluated in a dermatology outpatient clinic reporting intense pruritus in the scapular region that started immediately or shortly after contact with bath water. No active lesions were found on dermatological examination. Initially, two diagnostic hypotheses were considered: polycythemia vera and aquagenic urticaria. During further evaluations, the patient reported using testosterone enanthate as an anabolic steroid for approximately 3 years. Laboratory investigations including complete blood count and erythropoietin were requested. To rule out the diagnosis of aquagenic urticaria, a towel soaked with water at 36°C was applied to the patient's dorsal area for a duration of 40 minutes. Two biopsies were performed at distinct sites on the patient's back, the location of the most intense pruritus. The first biopsy was conducted prior to water exposure, while the second biopsy was undertaken after water exposure.

Results:

Following the removal of the water-soaked towel, the patient did not present any dermatological lesion, excluding the diagnosis of aquagenic urticaria. However, the onset of pruritus occurred during the presence of the moist towel upon the patient's dorsal region. Histopathology showed mononuclear and mast cell infiltrate, more intense in the biopsy after exposure to water. Hemogram showed erythrocytosis. Erythropoietin levels were within normal range, weakening the hypothesis of polycythemia vera. Erythrocytosis, nonetheless, could be related to the use of testosterone enanthate. Previous patient exams were requested and increased hematocrit and serum testosterone levels were present. The hypothesis of AP as a result of secondary polycythemia due to anabolic steroid use was suggested and reinforced after finding a single article reporting a case of AP in a patient with hypogonadism treated with testosterone replacement therapy. The same approach that stopped the aquagenic pruritus in the article was taken, which was a gradual reduction of the applied dose of testosterone.

Conclusion:

There are few reports of AP associated with testosterone-induced erythrocytosis. A detailed history and an extensive laboratorial investigation is crucial for the diagnosis of AP caused by anabolic-androgenic steroids. Other frequent systemic diseases needed to be ruled out in order to assure the causality between erythrocytosis and AP. Treatment includes quitting steroids administration. Lowering the hematocrit by removing the cause of erythrocytosis may decrease or cease the symptoms.

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Abstract N°: 3642**Treatment of chronic prurigo with upadacitinib: a case series**Constanza Riquelme¹, Javier Gil-Lianes¹, Daniel Morgado Carrasco¹¹Hospital Clínic de Barcelona, Dermatology , Barcelona, Spain**Introduction & Objectives:**

Chronic prurigo (CPG) is a neuroinflammatory dermatosis characterized by the presence of pruritus for at least 6 weeks, a history and/or signs of scratching and pruritic skin lesions. Upadacitinib is a selective JAK-1 inhibitor approved in dermatology for the treatment of moderate-to-severe atopic dermatitis (AD). We present a case series of patients diagnosed with CPG that received treatment with upadacitinib.

Materials & Methods:

Case series of three patients diagnosed with CPG with clinical follow-up at the Dermatology Department in a tertiary hospital from January 2022 to April 2023 were treated with Upadacitinib. Patients received a once daily dose of 15 mg. Follow-up and laboratory monitoring were performed according to clinical response. Pruritus was measured using the numeric rating scale (NRS): average pruritus of the past 24 hours. Quality of life was assessed with the dermatology life quality index (DLQI).

Results: Clinically, two patients presented nodular-type CPG and one patient plaque-type CPG. All patients had been submitted to multiple therapies which included topical and intralesional corticosteroids, gabapentinoids, methotrexate and cyclosporine. All patients had side effects due to these medications (headache, nausea, hypertension), mild improvement of pruritus and no resolution of cutaneous lesions. After assessing different treatment options, the patients preferred a rapid-onset treatment with predominant pruritus control. Rapid itch improvement was reported by all patients (median 3-7 days) with complete resolution of pruritus after two weeks (NRS 0). Cutaneous lesions remitted, with residual hiper/hypopigmentation, within a median of 3-4 weeks. No relapses nor adverse events were observed.

Conclusion: Our real-life experience with upadacitinib treatment in three patients with CPG illustrates a rapid response in terms of pruritus, skin lesions and improvement of quality of life. Although further evaluation in larger studies is needed, upadacitinib could represent a rapid and well-tolerated alternative treatment for CPG.

Abstract N°: 4779**Risk of itch-induced sleep deprivation and subsequent mental health comorbidities in patients with prurigo nodularis: A population-level analysis using the Health Improvement Network**Marina Joel¹, Anusha Kambala¹, Hannah Cornman¹, Matthew Taylor¹, Sylvie Gabriel², Shawn Kwatra^{*1}¹The Johns Hopkins University School of Medicine, Dermatology, Baltimore, United States, ²Galderma SA, Lausanne, Switzerland

Introduction & Objectives: Prurigo nodularis (PN) is a chronic inflammatory skin disorder characterized by pruritic nodules that appear most commonly on the arms, legs, and trunk. We hypothesize the intense pruritus of PN leads to sleepless nights, manifesting as depression and anxiety.

Materials & Methods: To identify PN patients and matched controls, we used The Health Improvement Network (THIN), an electronic medical record database in the United Kingdom. We used diagnostic READ codes to select for diagnoses of insomnia, major depressive disorder (MDD), and anxiety disorder based on records from years 1994 to 2021. We identified 4193 patients with newly diagnosed PN and 4193 age, sex, and race/ethnicity-matched patients without PN.

Results: Cox regression results adjusted for age, sex, race/ethnicity, BMI, and psychiatric comorbidities demonstrated that PN was associated with insomnia (aHR = 1.77; 95% CI = 1.48-2.12). Out of the 311 PN patients with incident insomnia, 30 (9.6%) were diagnosed with MDD and 63 (20.3%) with anxiety. In contrast, among the 3882 PN patients without insomnia, 169 (4.4%) had MDD and 410 (10.6%) had anxiety. Finally, of the 4193 controls, 105 (2.5%) were diagnosed with MDD and 346 (8.3%) with anxiety. Overall, PN patients had increased risk of MDD (OR = 1.94; 95% CI = 1.53-2.47) and anxiety (OR = 1.41; 95% CI = 1.22-1.64) compared to controls. Furthermore, PN patients with insomnia showed elevated risk of MDD (OR = 2.35; 95% CI = 1.56-3.52) and anxiety (OR = 2.15; 95% CI = 1.60-2.89) compared to PN patients without insomnia.**

Conclusion: Our findings suggest that the vicious itch-scratch cycle in PN leads to sleep disturbance. Sleep deprivation and insomnia negatively impacts mental health and is associated with the development of neurocognitive morbidities, such as depression and anxiety. Disrupting this cycle through rapid and sustained itch relief is crucial to restore sleep quality in PN patients. Thus, early identification and treatment in patients with PN is essential for improvement of long-term outcomes.



Abstract N°: 4798**Real-world experience from a tertiary care center utilizing dupilumab for the management of prurigo nodularis**Hannah Cornman¹, Christeen Samuel¹, Anusha Kambala¹, Jingyi Zhang¹, Shihua Chen¹, Sriya Reddy¹, Shawn Kwatra*¹¹The Johns Hopkins University School of Medicine, Dermatology, Baltimore, United States

Introduction & Objectives: Prurigo nodularis (PN) is a chronic inflammatory skin disease with a neuro-immune component. Dupilumab, a monoclonal antibody targeting IL-4R α signaling, has gained approval for treatment of PN in the United States and Europe. However, there is a lack of real-world data on the efficacy and safety of dupilumab in diverse patient populations. This is particularly relevant considering recent studies highlighting racial-biased endotypes in PN, where African American patients may exhibit greater involvement of other immune axes. Here, we present a case series of 12 PN patients treated with at least 6 months of dupilumab therapy.

Materials & Methods: We conducted a retrospective medical record review of patient characteristics, comorbidities, labs, prior therapies, adverse effects, disease severity (Investigator's Global Assessment [IGA] score), and worst itch numerical rating scale (WI-NRS) scores. All patients were treated with dupilumab at an initial dose of 600 mg subcutaneously, followed by 300 mg every two weeks. Mann-Whitney U and Chi-squared tests were used to compare continuous and categorical variables, respectively.

Results: The median (IQR) age of all patients was 57 (51-63). Thirty-three percent were African American, 42% were Caucasian, and 25% were Asian. Six patients (50%) experienced clinically significant improvement in pruritus (responders), defined as a sustained ≥ 4 -point decrease in WI-NRS score, and 6 patients did not (non-responders). Four patients (33.3%) achieved 'clear' or 'almost clear' skin (IGA score of 0 or 1) in addition to a 4-point drop in WI-NRS. There was no significant difference between responders and non-responders in baseline WI-NRS (10 [9-10] vs. 9.5 [7.75-9.5], $p=0.47$) or IGA (4 [3-4] vs. 3 [2.75-3.25], $p=0.18$). Compared to non-responders, dupilumab responders were older (median 62.5 vs. 51 years, $p=0.03$), had a higher absolute eosinophil count (median 0.395 K/ μ L vs. 0.1 K/ μ L, $p<0.01$), and were more likely to have a history of atopy, defined as $\geq 2/3$ of allergic rhinitis, asthma, or atopic dermatitis (83.3% vs 33.3%, $p=0.08$). A smaller proportion of African Americans responded to dupilumab as compared to Asians (0% vs. 66.7%, $p=0.05$) and Caucasians (0% vs. 80%, $p=0.02$). The time to 4-point drop in WI-NRS for responders ranged from 1-10 months, with a median (IQR) of 4.0 (2.13-7) months. Adverse events included new-onset psoriasis in two responders, neither of which required drug discontinuation.

Conclusion: This case series demonstrates variability in response to dupilumab therapy among patients with PN. It also identifies elevated levels of absolute eosinophils and more frequent atopic history in dupilumab responders, which may help predict which patients will have the best response to dupilumab therapy. Larger registry studies are needed to expand these findings to larger, diverse patient populations.



Abstract N°: 4972

Dupilumab Treatment Improves Satisfaction in Patients With Prurigo Nodularis Who Did Not Achieve the Multicomponent Endpoint: Analysis From LIBERTY-PN PRIME and PRIME 2

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Introduction & Objectives: Patients with prurigo nodularis (PN) often report high disease burden with substantial impact on quality of life. Patient Global Impression of Change (PGIC) and Severity (PGIS) are patient self-assessment measures that quantify their experience of disease during treatment. Dupilumab has recently been approved as the first systemic treatment for PN in the US and Europe. Here we report a global impression of disease severity improvement in dupilumab-treated patients with PN during the LIBERTY-PN PRIME and PRIME 2 trials.**

Materials & Methods: PRIME and PRIME2 were randomized, double-blind, multicenter, parallel-group, 24-week, phase 3 trials in adults with PN with ≥ 20 nodules and severe itch, inadequately controlled with topical prescription therapies or for whom these are inadvisable. Patients received 300 mg dupilumab subcutaneously (600 mg loading dose; n = 153) or matched placebo (n = 158) every 2 weeks. In this analysis, data from the two studies were pooled. Patient satisfaction was assessed in the overall placebo group, overall dupilumab-treated group, and those treated with dupilumab who did not achieve the stringent multicomponent endpoint (n = 99) of ≥ 4 -point improvement from baseline in Worst Itch Numerical Rating Scale (WI-NRS, range: 0–10) and an Investigator's Global Assessment PN Stage (IGA PN-S, score range: 0–4) score 0 or 1 (clear or almost clear; ≤ 5 nodules) at Week (W) 24. Endpoints include proportion of patients achieving: PGIC (range: 0–6) scores of 0 or 1 (very much better or moderately better) at W12, and W24; and PGIS (range: 1–4) score of 1 or 2 (none or mild) at baseline, W12, and W24. Safety was also assessed.

Results: Baseline demographic and clinical characteristics were generally similar between groups. In the overall dupilumab and placebo groups, baseline mean (SD) WI-NRS scores were 8.6 (0.9) and 8.4 (1.1), respectively; 32.7% and 34.2% had an IGA PN-S score of 4 (remaining patients had IGA PN-S 3); and mean (SD) PGIS scores were 3.7 (0.5) and 3.7 (0.5) respectively. In dupilumab multicomponent endpoint non-responders, mean (SD) WI-NRS score was 8.6 (0.9). 35.4% and 64.6% had an IGA PN-S score of 4 and 3 respectively; and mean (SD) PGIS score was 3.7 (0.5). At W12, 68.0% vs 38.0% ($P < 0.0001$ vs placebo) of dupilumab-treated vs placebo-receiving patients achieved PGIC 0 or 1, while 55.6% of dupilumab multicomponent non-responders achieved this endpoint ($P = 0.0099$ vs placebo). At W24, this increased to 74.5% vs 32.9% ($P < 0.0001$ vs placebo) of dupilumab-treated vs placebo-receiving patients achieving PGIC 0 or 1, and 61.6% of multicomponent non-achievers ($P < 0.0001$ vs placebo). At W12, 51.6% vs 22.2% ($P < 0.0001$ vs placebo) of dupilumab-treated vs placebo-receiving patients achieved PGIS 1 or 2, while 40.4% of multicomponent non-responders achieved the endpoint ($P = 0.0027$ vs placebo). At W24, 61.4% vs 24.1% ($P < 0.0001$ vs placebo) of dupilumab-treated vs placebo-receiving patients achieved PGIS 1 or 2, while 44.4% of multicomponent non-responders achieved the endpoint ($P = 0.0025$ vs placebo). Safety findings were consistent with the known dupilumab safety profile.

Conclusion: During the 24-week treatment period of PRIME and PRIME 2 trials, 2/3 of dupilumab-treated patients reported significantly more improvement in disease severity and satisfaction compared to the placebo group, including around 1/2 of those who did not achieve the composite endpoint. Overall safety was consistent with the known dupilumab safety profile.

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Abstract N°: 5207**Sensitive skin syndrome: a meta-analysis of clinical trials evaluating the impact of dermocosmetics on itch**

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Introduction & Objectives:

There is a growing body of data supporting the concept that sensitive skin is a type of small-fiber neuropathy which lead to many symptoms including itch. Mild levels of pain or itch are frequently reported by sensitive skin sufferers. The focus of this meta analysis was to evaluate the potential of dermocosmetics designed for sensitive skin to reduce the itch symptom.

Materials & Methods:

A meta-analysis was performed on 9 clinical studies evaluating dermocosmetics specifically designed for sensitive skin (cleansers & moisturizing lotions). The sensitive skin status of 349 subjects with diverse ethnicities was assessed using the Sensitive Scale-10 before and after 28 days of use. The evolution of itch severity as well as the SS-10 score (including the sum of the scores of the 10 items) were analyzed.

Results:

According to the cut-off scores published by Misery et al on SS-10, 100% of the subjects had sensitive skin (SS-10 > 13), 37% presented very sensitive skin (SS-10 > 28). At D0, the population presented an average SS-10 score of 26/100 and an average itch score of 3.4/10. After 28 days, average global SS-10 score decreased to 4.3/100 (-83%, $p < 0.05$) which classified the subjects as non sensitive anymore. In addition, the mean itch score decreased to 0.52/10 (-85%, $p < 0.05$). When analysed separately, cleansers and moisturizing lotions both provided significant decrease of these two criteria ($p < 0.05$). These results were confirmed by the self-perception of the subjects. Indeed, more than 80% agreed that the products used as a stand alone or in a regimen were able to soothe their skin on a short and long term.

Conclusion: The results of this meta-analysis clearly demonstrated the added value of tailored made dermocosmetics in the management of itch in sensitive skin sufferers. Further studies might be needed to explore whether the decrease of itch can impact the quality of life of people with sensitive skin.



Abstract N°: 5250**Dupilumab is Efficacious in Patients with Prurigo Nodularis Regardless of Baseline Lesion Severity: Pooled Results from Two Phase 3 Trials (LIBERTY-PN PRIME and PRIME2)**

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Introduction & Objectives: Prurigo nodularis (PN), a chronic inflammatory and pruritic skin condition with severely itchy skin nodules, substantially affects quality of life. Patients with PN are affected by highly pruritic lesions that can feature other sensations, such as stinging, burning, tingling, heat, and cold. These lesions can range in severity from a few nodules to several hundred, and in sizes from 10 millimeters to 2–3 cm. This analysis reports the effect of dupilumab on pruritus and skin lesions in patients with PN according to the severity of their lesions at baseline, in a post hoc analysis of pooled data from two phase 3 trials.

Materials & Methods: In the two randomized, double-blind, placebo-controlled, 24-week studies LIBERTY-PN PRIME (NCT04183335) and PRIME2 (NCT04202679), adults with PN inadequately controlled by topical prescription therapies, or for whom those therapies are inadvisable, were randomized 1:1 to dupilumab 300 mg every 2 weeks or matched placebo. Efficacy was assessed from baseline to Week 24 through the Worst Itch Numerical Rating Scale (WI-NRS; scored 0–10; high scores represent a poorer outcome), and the Investigator's Global Assessment for PN-Stage score (IGA PN S; scored 0–4; high scores represent more severe nodular disease). The PRIME and PRIME2 studies enrolled only patients with an IGA PN-S of 3 (moderate; 20–100 nodules) or 4 (severe; >100 nodules) at baseline.

Results: 311 patients were randomized (dupilumab/placebo n = 153/158), including 205 patients with moderate PN (IGA PN-S = 3) at baseline (dupilumab/placebo N = 103/102) and 104 patients with severe PN (IGA PN-S = 4) at baseline (dupilumab/placebo N = 50/54). Baseline demographics and disease characteristics were well balanced in both subgroups. At Week 24, significantly more dupilumab-treated patients achieved an IGA PN-S of 0 (no nodules) or 1 (almost clear; 1–5 nodules), whether they had moderate (52.4% vs 24.5%; nominal P = 0.0008) or severe (40.0% vs 7.4%; nominal P = 0.0014) PN at baseline, with a similar treatment effect (TE) vs placebo in both the moderate (27.9%) and severe (32.6%) subgroups. The proportion of patients with ≥ 3 -point and ≥ 4 -point improvement in WI-NRS, was also significantly greater in the dupilumab group than in the placebo group, whether their PN was moderate (68.9%/62.1% vs 34.3%/22.6%; nominal P = 0.0002/P < 0.0001, respectively) or severe (72.0%/66.0% vs 31.5%/25.9%; nominal P = 0.0064/P = 0.0046, resp.) at baseline. Treatment-emergent adverse events (TEAEs) occurred with higher rates in dupilumab-treated patients with moderate PN at baseline (71.6%) compared with placebo (57.8%). Patients with severe PN at baseline had similar rates of TEAEs in the dupilumab (48.0%) and placebo (55.6%) groups. Nevertheless, dupilumab-treated patients with moderate PN at baseline, and those with severe PN at baseline, had overall similar or lower rates vs placebo of serious TEAEs (3.9%/6.0% vs 8.8%/5.6%, resp.), severe TEAEs (4.9%/0.0% vs 5.9%/5.6%, resp.), and frequent TEAEs such as headache (6.9%/2.0% vs 5.9%/5.6%, resp.) and neurodermatitis (2.9%/2.0% vs 2.9%/14.8%, resp.). The incidence of conjunctivitis in dupilumab-treated patients was consistent with the known safety profile vs placebo in both the moderate and severe groups (4.9%/2.0% vs 2.0%/0.0%, resp.).

Conclusion: Dupilumab treatment for 24 weeks improves itch and skin lesions in patients with PN regardless of lesion severity at baseline, with an acceptable safety profile.

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Abstract N°: 5329

Dupilumab is Efficacious in Patients with Prurigo Nodularis Regardless of Stable Use of Topical Corticosteroids and Topical Calcineurin Inhibitors: Pooled Results from Two Phase 3 Trials (LIBERTY-PN PRIME and PRIME2)

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Introduction & Objectives: Prurigo nodularis (PN) is a chronic inflammatory skin condition characterized by severely itchy skin nodules, which substantially affects quality of life. Although topical treatments are frequently prescribed, these therapies are limited by insufficient demonstrated evidence for efficacy, and/or associated side effects. This study reports the effect of dupilumab on pruritus, skin lesions, and quality of life in patients with PN, with or without stable use of topical corticosteroids (TCS) and/or topical calcineurin inhibitors (TCI), in an analysis of pooled data from two phase 3 trials.

Materials & Methods: LIBERTY-PN PRIME (NCT04183335) and PRIME2 (NCT04202679) were two randomized, double-blind, placebo-controlled, 24-week studies. Adults with PN inadequately controlled by topical prescription therapies, or for whom those therapies are inadvisable, were randomized 1:1 to dupilumab 300 mg every 2 weeks or matched placebo. "Stable use" was defined as maintaining the same medicine (low-to-medium potency TCS and/or TCI) during the study, with the same frequency of treatment (once or twice daily) as from 2 weeks prior to screening. Efficacy was assessed from baseline to Week 24 through the Worst Itch Numerical Rating Scale (WI-NRS; scored 0–10; high scores represent a poorer outcome), and the Investigator's Global Assessment for PN-Stage score (IGA PN S; scored 0–4; high scores represent a poorer outcome). Impact on Health-Related Quality of Life (HRQoL) was assessed through the Dermatology Life Quality Index questionnaire (DLQI; 10 questions scored 0–3 with a maximum score of 30; high scores represent poorer HRQoL).

Results: 311 patients were randomized (dupilumab/placebo n = 153/158), including 182 patients with stable use of TCI/TCS (dupilumab/placebo N = 91/91) and 129 patients without (dupilumab/placebo N = 62/67). Baseline demographics and disease characteristics were well balanced in both subgroups. At Week 24, significantly more patients treated with dupilumab with or without stable use of TCI/TCS achieved a ≥ 4 -point improvement in WI-NRS (59.3%/58.1%) vs placebo (13.2%/26.9% [nominal P < 0.0001/P < 0.0001]). The proportion of patients achieving an IGA PN-S score of 0 or 1 at Week 24 was also significantly higher in the dupilumab group for patients with or without stable use of TCI/TCS (48.4%/43.5%), vs placebo (11.0%/25.4% [nominal P < 0.0001/P = 0.0319]). The positive impact of dupilumab treatment on HRQoL was greater, for patients with and without a stable use of TCI/TCS vs placebo, as suggested by the mean change from baseline in DLQI at Week 24 (–12.9/–11.9 vs –5.5/–7.1 [nominal P < 0.0001/P < 0.0001], respectively). Although the placebo response was higher for patients without stable use of TCI/TCS, the effect of dupilumab treatment was comparable in the two subgroups. Treatment-emergent adverse events (TEAEs) occurred with similar rates in dupilumab-treated patients with or without stable use of TCI/TCS (59.3%/60.7%), compared with placebo (53.3%/47.8%). Patients with or without stable use of TCI/TCS had similar rates of severe TEAEs in the dupilumab groups (2.2%/4.9%) and placebo groups (3.3%/4.5%).

Conclusion: Dupilumab treatment improves itch, skin lesions, and quality of life in patients with PN, with an acceptable safety profile, with little to no influence from concomitant treatment with topical therapies (TCI/TCS).

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Abstract N°: 5389**The German registry PruriBest: Methods and set-up**Nomun Ganjuur¹, Matthias Augustin¹, Claudia Zeidler², Sonja Ständer²

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Introduction & Objectives: Chronic pruritus (CP) and chronic prurigo (CPG) are debilitating dermatological conditions associated with intense itch and in the case of CPG pruriginous skin lesions. Patient registries use observational methods to systematically collect standardized health data to ensure good clinical practice and quality of care. The German patient registry “PruriBest” aims to provide long-term evidence on quality, safety, effectiveness and patient benefits of routine care for patients with CP and CPG. The mission is to gain knowledge of clinical subtypes and real-world data.

Materials & Methods: This project encompasses the conceptualization and development of the German National Registry “PruriBest”, which observes adult patients with CP and CPG in Germany. Each module for specific forms of CP and CPG includes clinically diagnosed patients being registered at the start of treatment and are followed up for up to 5 years regardless of the further course of treatment. Data is collected in an online database using standardized questionnaires. Clinical parameters (e.g. Pruritus Numerical Rating Scale (NRS), Dynamic Pruritus Score (DPS)), patient-reported outcomes (e.g. the Dermatologic Quality of Life Index (DLQI), Itchy Quality of Life (ItchyQoL)) and drug-specific treatment data are documented. Drug safety data is collected via SAE reporting forms and standard documentation is used for non-SAE.

Results: The core data set of single parameters was consented and an electronic data capturing system has been developed. In the pilot test phase, the digital version has been shown to be highly feasible. Data will be obtained from >30 leading German centers over a period of 5 years starting in 2023.

Conclusion: “PruriBest” records data on CP and CPG in Germany and contributes to quality assurance and optimization of care for a severe skin disease. The intention is to build a solid registry to derive data crucial for further clinical and epidemiological research.



Abstract N°: 5949

Notalgia paresthetica associated with multiple endocrine neoplasia type II A (Sipple's syndrome): a case report.

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Introduction & Objectives:

Notalgia paresthetica (NP) is a sensory neuropathy commonly manifested by pruritus and the appearance of a hyperpigmented macula, the classic location is the unilateral infrascapular area.

Although the etiology of notalgia paresthetica is unclear, the physiopathology is unknown, but the two hypotheses proposed are the following: Localized increased sensory innervation of the affected skin areas, and neuropathy from degenerative cervicothoracic disk disease or direct nerve impingement. There is no definitive treatment for this disorder

Materials & Methods:

21-year-old Patient. Admitted to the endocrinology department for therapeutic management of pheochromocytoma. The tumor was surgically treated by total laparoscopic adrenalectomy. Before the presence of a deceased aunt NEM, an exploration was launched, thyroid scan which objectified nodule 2 cm in diameter, with a rate of plasma calcitonin to 83 pg / ml, which confirms the diagnosis of medullary thyroid carcinoma treated surgically by total thyroidectomy with lymph node dissection.

A genetic study looking for mutations activating germline mutations of the RET proto-oncogene has been launched. A notice in dermatology has been requested for a tingling, itching or pain in the left shoulder, On examination, there was a hyperpigmented patch medial to the left scapula within the dermatomes of T2-T6. The patient had hyperesthesia to light touch in this area.

Results:

The exact pathophysiology of the cutaneous findings of notalgia paresthetica remain unknown. The cause of NP is unclear. Several possible etiologies have been proposed, but it is generally believed that NP is a sensory neuropathy. A small study by Springall and colleagues suggested a proliferation of cutaneous nerves in NP lesions [1]. This finding was not confirmed in any of the 14 patients Savk et al biopsied; none of the tissue samples showed an increase in dermal innervation compared with controls [2]. Most evidence suggests NP is the result of damage to the cutaneous branches of the posterior divisions of the spinal nerves. This can occur either by impingement from degenerative changes in the spine or spasms in the paraspinal musculature. Pain, paresthesia, and numbness are more commonly thought of as neurological findings, but pruritus is an often-unrecognized symptom of nerve damage.

Notalgia paresthetica is a benign cutaneous disorder which can be associated with multiple endocrine neoplasia type IIA. It can be considered that notalgia paresthetica is an early clinical marker of multiple endocrine neoplasia type IIA.

Patients with a familial history of notalgia paresthetica or with an onset of notalgia paresthetica in childhood should be screened for multiple endocrine neoplasia type II A.

Dermatologists should be aware of this association.

Conclusion:

Notalgia paresthetica is an isolated sensory mononeuropathy. Its association with multiple endocrine neoplasia type II A has been reported in a few cases. We report a case of this association.

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Abstract N°: 5956

Red scrotum syndrome: A clinical and therapeutic challenge

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Red scrotum syndrome: A clinical and therapeutic challenge

Introduction & Objectives:

Red scrotum syndrome (RSS) is a rare and chronic underdiagnosed skin disorder affecting males in their second half of life and characterized by persistent redness of the scrotum accompanied by itching, burning and pain sensations.

We report a case of RSS affecting a young man and responding to oral pregabalin. We also report a second case of RSS responding to b-Blocker.

Materials & Methods:

Case 1:

A 36-year-old man presented to our department with persistent scrotal erythema evolving for one year.

He reported burning pain that was accentuated in the evening and by warmth and relieved by cold as well as intense pruritus.

Several treatments have already been instituted: topical hydrocortisone, local lidocaine, without result.

On examination, there was erythema, without scales. The border to the adjacent skin was sharp.

The diagnosis of RSS was made

Pregabalin was prescribed in monotherapy, 150 mg once daily at night.

Case 2:

A 57-year-old male referred a 2-month symptomatology of the scrotal skin: persistent erythema with burning sensation and hyperalgesia. He has previously employed non-specified topical treatments without improvement.

Clinical examination revealed bright-red erythema sharply defined in the anterior scrotum. No suggestive symptoms of contact dermatitis or tinea were noted.

The diagnosis of RSS was made.

Carvedilol was prescribed in monotherapy, 6.25mg once daily.

Results:

After 2 months of treatment with pregabalin for the first case and with carvedilol for the second case, the patients referred complete remission and they are currently being followed up

Conclusion:

RSS has been rarely reported in young patients as it affects men older than 50 years.

The exact etiopathogenesis of RSS is still unknown. The suggested mechanisms are rebound vasodilation after prolonged topical corticosteroid use and localized erythromelalgia.

RSS is generally a diagnosis of exclusion and the principal differential diagnosis is tinea. It can also be misdiagnosed with contact dermatitis, atopic dermatitis, inverse psoriasis.

In most cases investigations are not required. If scale is present skin scrapings should be sent for mycology to look for fungal infection and patch tests if contact allergic dermatitis is suspected.

A late diagnosis leads to the prescription of ineffective treatments that can sometimes maintain the erythema and to the deterioration of the quality of life of patients. No first-line option is currently available. Initially, TCs

should be discontinued. As the RSS has a neuropathic component, Pregabalin, a calcium channel $\alpha_2\text{-}\delta$ ligand commonly used for neuropathic pain has shown its efficacy. B-blockers have been

also successfully used by inducing vasoconstriction of the cutaneous arterial blood vessels.

However, recurrence and resistance to treatment are common, a long-term follow-up is therefore necessary.



Abstract N°: 6634**Global study on prevalence of itch confirms absence of ethnic differences despite presence of geographic differences**

Gil Yosipovitch¹, Charbel Skayem¹, Marketa Saint Aroman¹, Catherine Baissac¹, Yaron Ben Hayoun¹, Charles Taieb¹, Bruno Halioua¹, Laurent Misery¹

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Introduction & Objectives:

Itch is a common symptom that is experienced by everyone at some point in their lives. However, very few studies tackled the prevalence, and they were all limited to one country. It has long been said that pruritus varies significantly across different ethnic populations, and that black people itch more, but no study has evaluated this. We conducted the first worldwide study in 20 countries representing half of the world's population, to assess the prevalence of itch according to age, gender, ethnicity, and geographic regions.

Materials & Methods:

An international cross-sectional study was conducted from January to April 2023. Participants were asked to complete a questionnaire on sociodemographics, confirm presence or absence of a skin disease in the last year and the presence or absence of pruritus in the last 7 days.

Results:

The studied sample included 50552 individuals (women:49.78%). 40.7% reported a skin disease in the past 12 months. Results are in Figures 1&2. BRICS countries had a significantly higher prevalence compared to developed countries(40.3% vs 38.7%, $p < 10^{-3}$). The global prevalence of pruritus was 39.8%. This study is the first to survey a large sample of 20 countries (including China+India) representing more than half of the world's population in the same time frame, with the same questionnaire, and taking into account the demographic weight of each country. A Norwegian study showed a prevalence of acute itching of 27%. Chronic pruritus was reported in 16% of German workers. A French study showed that 32% of people complained of pruritus in the past week. The difference can mostly be attributed to surveys assessing different types of itch(acute in Norwegian and chronic in German&French studies), and different populations and times of studies. The French study showed no direct association between prevalence of pruritus and age. Our study corroborates findings in John Hopkins Health System, with higher female prevalence. It has long been said that pruritus varies significantly across different ethnic populations since several pruritic dermatoses occur more frequently in certain ethnicities. Surprisingly, in our study ethnicity had no effect on the prevalence. Europe had the lowest prevalence in the world. Compared to North America, the prevalence of pruritus was significantly higher in East Asia and Africa, and lower in Europe, Australia, and South America. The different prevalences might be attributed to difference in access to care and health equalities across these countries.

Conclusion:

Our study is the first to confirm the absence of ethnic differences in the prevalence of pruritus. A higher prevalence was shown in patients above 65 years old and in females. However, further studies are necessary to clarify factors that may lead to differences in the prevalence of pruritus in different geographic regions, independent of ethnicities.

32ND EADV Congress 2023
11 OCTOBER - 14 OCTOBER 2023
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Abstract N°: 6727**Efficacy, safety, and mechanism of action of abrocitinib in the treatment of prurigo nodularis and chronic pruritus of unknown origin**

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Introduction & Objectives: Prurigo nodularis (PN) and chronic pruritus of unknown origin (CPUO) are chronic pruritic diseases that dramatically impair quality of life, but therapeutic options are limited. Abrocitinib, a Janus kinase 1 (JAK1) inhibitor, represents a promising therapy for both conditions. Our objective was to assess the efficacy, safety, and transcriptomic effects of abrocitinib in the treatment of PN and CPUO.

Materials & Methods: We conducted a 12-week, ** open-label, phase 2** trial of abrocitinib administered orally at 200 mg daily. Ten patients had moderate-to-severe PN (Peak Pruritus Numeric Rating Scale [PP-NRS] score ≥ 7 and Investigator Global Assessment [IGA] score ≥ 3) and 10 had moderate-to-severe CPUO (PP-NRS score ≥ 7). The primary efficacy endpoint was percent change in PP-NRS score from baseline to week 12. Secondary endpoints included percentage of patients achieving a ≥ 4 -point reduction on the PP-NRS; percent change in Dermatology Life Quality Index (DLQI) score; and, for PN, percent change in IGA score. Cutaneous transcriptome analysis was performed at baseline and week 12.

Results: Mean baseline PP-NRS score was 9.2 for PN and 8.2 for CPUO. PP-NRS scores decreased by 78.3% in PN ($p < 0.001$) and 53.7% in CPUO ($p = 0.01$) by week 12. 80% of PN patients and 60% of CPUO patients achieved a ≥ 4 -point decrease on the PP-NRS. Both groups experienced significant improvement in quality of life as demonstrated by percent change in DLQI scores (-53.2% [$p = 0.002$] for PN, -49.0% [$p = 0.02$] for CPUO). For PN, mean IGA score decreased by 30.6% ($p = 0.008$), indicating significant reduction in lesion burden. The most common adverse event among patients was acneiform eruption (2/20, 10%). No serious or life-threatening adverse events occurred. In PN, abrocitinib resulted in normalization of Th1, Th2, Th17, and Th22 pathways in lesional compared to nonlesional skin. In CPUO, clinical improvement was accompanied by a significant decrease in Th1, Th2, Th22, and JAK3-related gene signatures ($p < 0.05$). Itch reduction was associated with transcriptomic changes in pathways related to keratinization, extracellular matrix organization, and IL-4, IL-13, and IL-10 signaling in PN, and pathways related to IL-2 production and lymphocyte activation and differentiation in CPUO ($q < 0.05$).

Conclusion: Abrocitinib resulted in rapid and significant reduction of itch and disease severity in both PN and CPUO, with significant improvement in the molecular skin signature.

