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Considerable variability in the efficacy of 8% capsaicin topical patches in the treatment of chronic pruritus in 3 notalgia paresthetica patients

Andersen, Hjalte Holm; Sand, Carsten; Elberling, Jesper

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to better understand patients' experiences. This symptom could be taken into account in the quality of life scale. Pruritus is a poorly known but crucial symptom of NF1.

CLINICAL RESEARCH TRACK – THERAPEUTICS

PP22

SAFETY AND ANTI-PRURITIC EFFICACY OF A MENTHOL-CONTAINING MOISTURIZING CREAM

Wei-Sheng Chong, Hong Liang Tey

National Skin Center, Singapore

Background: Itch is frequently associated with dermatoses characterized by a defective skin barrier. We formulated an itch-relieving moisturizing cream containing 3% menthol and ceramides. **Aims:** To evaluate the safety and anti-pruritic efficacy of application of this cream in volunteers with and without skin diseases. **Methods:** Volunteers were to apply the cream for 1 month on a minimum body surface area of 6%. Safety was assessed by the absence of contact dermatitis or other side effects, using a self-administered questionnaire administered at 5 minutes, 1 week and 1 month after application. To assess efficacy, volunteers with pruritic dermatoses were to grade their average itch intensity at baseline, 1 week and 1 month after application. **Results:** Sixty volunteers were recruited, of whom 41 had no skin disease. There were no adverse events reported in the latter. Of the 19 volunteers with dermatoses, 18 reportedly had eczema. One stopped application due to stinging sensations induced by menthol. Itch scores of volunteers with eczema improved from baseline at 1 week ($p=0.01$) and 1 month ($p<0.01$) after application. **Conclusion:** Application of a 3% menthol-containing moisturizing cream was safe in healthy individuals and individuals with eczema. In the latter, application of the cream significantly reduced itch scores.

PP23

PLEIOTROPIC ACTION OF CYCLOSPORINE ON PRURITUS OF ATOPIC DERMATITIS

Mitsutoshi Tominaga¹, Kyi Chan Ko¹, Yayoi Kamata¹, Yoshie Umehara¹, Hironori Matsuda¹, Nobuaki Takahashi¹, Katsunari Kina¹, Mayuko Ogawa¹, Hideoki Ogawa¹, Kenji Takamori^{1,2}

¹Institute for Environmental and Gender Specific Medicine, Juntendo University Graduate School of Medicine, Urayasu, ²Department of Dermatology, Juntendo University Urayasu Hospital, Urayasu, Japan

Cyclosporine A (CsA) is currently used in treatment of patients with severe atopic dermatitis (AD) and suppresses the pruritus, although its antipruritic mechanism is poorly understood. This study was performed to reveal the antipruritic mechanism of CsA in AD using a mouse model of AD induced by repeated application of house dust mite *Dermatophagoides farinae* body (Dfb) ointment (Dfb-NC/Nga). Intraperitoneal injection of 5 mg/kg CsA significantly reduced epidermal nerve density, number of scratching bouts, dermatitis scores, and transepidermal water loss, as well as decreasing the numbers of CD4⁺ T cells, mast cells, and eosinophils in the dermis and decreasing epidermal thickness. Moreover, intraperitoneal injection of CsA dose-dependently inhibited increased itch-related receptor gene expression, such as interleukin-31 receptor A (IL-31RA) and neurokinin-1 receptor

(NK1R), in the dorsal root ganglion (DRG) of Dfb-NC/Nga mice. Thus, the therapeutic efficacy of CsA in pruritus of AD may involve reduced epidermal nerve density and expression levels of IL-31RA and NK1R in the DRG as well as improvement of acanthosis and reduction of cutaneous inflammatory cell numbers.

PP24

DECREASE OF ITCH INTENSITY BY CR845, A NOVEL KAPPA OPIOID RECEPTOR AGONIST

Robert Spencer¹, Vandana Mathur², Joseph W. Stauffer¹, Frédérique Menzaghi¹

¹Cara Therapeutics, Inc., Shelton, Connecticut, ²MathurConsulting, San Francisco, California, USA

Kappa opioid agonists are known to modulate pruritus and the mixed non-selective mu partial agonist/kappa opioid agonist nalfurafine (Remitch™) is marketed in Japan for the treatment of uremic pruritus (UP) in hemodialysis patients. CR845 is a new kappa opioid receptor agonist being developed for the treatment of UP. In addition to its unique receptor profile (no activity at mu- or delta-opioid receptors), the peptidic structure of CR845 restricts its entry into the central nervous system and differentiates it from other therapies such as nalfurafine. A dose-dependent, sustained anti-itch activity was demonstrated for CR845 using in vivo mouse models of itch (induced by the selective KOR antagonist, 5'-GNTI, and the mast cell secretagogue, compound 48/80). IV CR845 was also evaluated in a double-blind, randomized, placebo-controlled trial in the US with 65 patients with moderate to severe UP. At the end of a two-week treatment period (administration 3 times/week after each dialysis), a significant reduction in itch intensity (as measured by a visual analog scale) was reported in patients receiving CR845 (1 µg/kg, $n=33$) compared to those receiving placebo ($p=0.016$, $n=32$). These results provide evidence that selective activation of peripheral kappa opioid receptors reduces itch.

CLINICAL RESEARCH TRACK – CLINICAL CASES

PP25

CONSIDERABLE VARIABILITY IN THE EFFICACY OF 8% CAPSAICIN TOPICAL PATCHES IN THE TREATMENT OF CHRONIC PRURITUS IN 3 NOTALGIA PARESTHETICA PATIENTS

Hjalte H. Andersen¹, Carsten Sand², Jesper Elberling³

¹SMI, Department of Health science and Technology, Faculty of Medicine, Aalborg University, ²Dermato-venereological Department, Bispebjerg Hospital, Copenhagen, ³The Allergy Clinic, Copenhagen University Hospital, Gentofte, Copenhagen, Denmark

Notalgia paresthetica is a relatively common focal neuropathic itch condition (IFSI classification III) manifesting in intense chronic or recurrent episodic itch in a hyperpigmented, macular, uni- or bilateral skin area frequently located below and/or medially to the scapulae. Achieving satisfactory relieve in notalgia paresthetica patients is highly challenging. In this case series three female notalgia paresthetica patients were treated with 8% capsaicin capsaicin patches following a spatial quantification of their alloknetic area with a 10 g von Frey filament. The use of a von Frey filament in order to delimit the precise area of itch, itch sensitization and thus patch application, proved clinically feasible. Although 8%

topical capsaicin relieved itch in all three patients, the duration of the effectiveness varied greatly from only 2–3 days to >2 months. The treatment was well tolerated by the three notalgia paresthetica patients and there appear to be no significant hindrances to applying this treatment with notalgia paresthetica as an indication, although it may only exhibit satisfactory effectiveness in certain patients. Placebo-controlled double-blinded trials are needed to confirm the effectiveness of the treatment and assess potential predictive parameters of the treatment outcome.

PP26

IMPACT OF PSEUDO-CERAMIDE CONTAINING MOISTURIZER ON THE ITCH INTENSITY IN SUBJECTS WITH ATOPIC DERMATITIS

Shoko Shindo¹, Hiroyuki Murota¹, Emi Ono¹, Mayuko Tahara¹, Tsuyoshi Seki², Katsura Mori², Kazuhiro Kaizu², Takahiro Nishizaka², Ichiro Katayama¹

¹Department of Dermatology, Course of Integrated Medicine, Graduate School of Medicine, Osaka University, Osaka, ²Skin Care Products Research Laboratories, Kao Corporation, Tokyo, Japan

Dry skin in atopic dermatitis (AD) has been thought to contribute to cause itch. It has been reported that ceramide-content decreased in stratum corneum of AD, and contributes to the skin dryness. To investigate the impact of topical application of ceramide on itch, we conducted a randomized placebo-controlled bilateral comparative study. Moisturizers with or without pseudo-ceramide were allocated in randomized manner to fore arms (especially cubital fossa) of subjects with mild and moderate AD ($n=9$) for 4 weeks. At the point of 0 week, 2 weeks and 4 weeks after initiation of this protocol, skin manifestations (e.g. itch VAS score, dryness, erythema, excoriation, water holding capacity, TEWL, threshold temperature and axon reflex-mediated sweating volume measured by quantitative sudomotor axon reflex test (QSART)) were evaluated. In the result, both pseudo-ceramide containing or placebo creams improved dryness. On the one hand, pseudo-ceramide containing cream apparently reduced itch VAS score compared to the placebo cream. This indicated that the topical pseudo-ceramide application will contribute to itch effectively.

CLINICAL RESEARCH TRACK – CLINICAL TRIALS

PP27

HAS SERTACONAZOL 2% AN ANTIPRURITIC EFFECT IN ATOPIC DERMATITIS?

Sonja Ständer¹, Martin Metz², Mac H. Ramos F.³, Marcus Maurer², Nicole Schhoepke², Athanasios Tsianakas¹, Claudia Zeidler¹, Thomas A. Luger¹

¹Competence Center Chronic Pruritus, Department of Dermatology, University Hospital Münster, ²Allergie-Centrum-Charité, Department of Dermatology and Allergy, Charité – Universitätsmedizin Berlin, Berlin, Germany, ³Galderma-Spirig, Egerkingen Switzerland

Sertaconazole has been reported to have direct immunomodulatory effects, which could possibly explain part of its antipruritic effect in fungal infections. However, little is known about its antipruritic effect in other pruritic skin diseases like e.g. atopic dermatitis. Therefore, we conducted a randomized, double-blind, placebo controlled, clinical trial to assess the antipruritic effect of topical

sertaconazole 2% cream in atopic dermatitis patients, who applied one of the two treatments twice daily during four weeks on pruritic AD skin. Primary efficacy success was defined as ≥ 2 grades pruritus intensity reduction (VRS) between baseline and week 4. Further efficacy variables were, pruritus intensity and insomnia (both VAS), state of atopic dermatitis (SCORAD) and of quality of life (DLQI). 16% of patients in the active group and 21% in the placebo group achieved the primary objective. Pruritus intensity as evaluated by VAS decreased slightly but not significantly more in the active group. Overall, no significant difference between sertaconazole 2% and placebo could be observed for any of the evaluated itch and itch related parameters.

PP28

IDIOPATHIC PRURITUS AMONG ELDERLY FRENCH OUTPATIENTS: CHARACTERISTICS AND IMPACT OF AN EMOLLIENT

*Jennifer Theunis, Cécile Viode, Ophélie Lejeune, Anne-Marie Schmitt, Christiane Casas, Valérie Mengeaud
Pierre Fabre Dermo-Cosmétique, Toulouse, France*

The prevalence of pruritus is high among the elderly, but surprisingly has been rarely studied in France. This pilot study was performed to describe pruritus among elderly French people and to assess the impact of an emollient. 15 patients aged 78.80 ± 9.19 years suffering from chronic idiopathic pruritus were enrolled. 46% experienced pruritus at least once per day. The arms were the most common sites where patients experienced pruritus (93.3%). In most cases (60%), a predisposing factor was found. After 2 weeks of emollient application, pruritus intensity was decreased as measured by VAS ($p=0.0015$) and a validated questionnaire ($p<0.0001$) and xerosis was improved (4-point grading scale ($p=0.0002$)). Cathepsin S, whose role in some pruritic inflammatory dermatoses is described, was assessed by taking cotton swab samples of skin on itching sites. Before treatment, Cathepsin S levels were similar to those of a population without pruritus or xerosis and remained unchanged after 2 weeks of treatment ($p=0.838$) suggesting that Cathepsin S is not involved in pruritus in the elderly. This pilot study validated the efficacy of an emollient in reducing pruritus intensity among elderly patients and suggested that Cathepsin S is not a relevant marker of pruritus in this population.

PP29

THE POSITIVE IMPACT OF MEDITATION ON QUALITY OF LIFE FOR PATIENTS WITH CHRONIC PRURITUS: A PILOT TRIAL

Alexandra Seamens, Mamta Jhaveri, Kuang-Ho Chen, Suephy Chen

Emory University, Atlanta, USA

Background: Chronic itch is a debilitating problem with exceedingly few medical therapy options. Meditation has been shown to reduce neuroendocrine and inflammatory markers. This study investigates the impact of meditation on chronic pruritus and quality of life (QoL). **Methods:** Seven adults with chronic pruritus participated in an 8-week meditation course. Four patients (57%) completed the course, defined as class attendance >75%. QoL was evaluated with a validated, self-reported questionnaire (ItchyQoL) before and after the course. The test reports a summative score