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## References

- Eskiizmir G, Ozgür E, Temiz P, Gençoğlu G, Ermertcan AT. The evaluation of tumor histopathology, location, characteristic, size and thickness of non melanoma skin cancers of the head and neck. *Kulak Burun Bogaz Ihtis Derg* 2012; **22**: 91–98.
- Cameron MC, Lee E, Hibler BP, Barker CA, Mori S, Cordova M *et al*. Basal cell carcinoma: Epidemiology; pathophysiology; clinical and histological subtypes; and disease associations. *J Am Acad Dermatol* 2019; **80**: 303–317.
- Lallas A, Apalla Z, Ioannides D, Argenziano G, Castagnetti F, Moscarella E *et al*. Dermoscopy in the diagnosis and management of basal cell carcinoma. *Future Oncol* 2015; **11**: 2975–2984.
- Kim DP, Kus KJB, Ruiz E. Basal cell carcinoma review. *Hematol Oncol Clin North Am* 2019; **33**: 13–24.
- Wozniak-Rito A, Zalaudek I, Rudnicka L. Dermoscopy of basal cell carcinoma. *Clin Exp Dermatol* 2018; **43**: 241–247.
- Deinlein T, Richtig G, Schwab C, Scarfi F, Arzberger E, Wolf I *et al*. The use of dermatoscopy in diagnosis and therapy of nonmelanocytic skin cancer. *J Dtsch Dermatol Ges* 2016; **14**: 144–151.
- Ulrich M, Zalaudek I, Welzel J. Shining into the White: the spectrum of epithelial tumors from actinic keratosis to squamous cell carcinoma. *Dermatol Clin* 2016; **34**: 459–467.
- Rosendahl C, Cameron A, Argenziano G, Zalaudek I, Tschandl P, Kittler H. Dermoscopy of squamous cell carcinoma and keratoacanthoma. *Arch Dermatol* 2012; **148**: 1386–1392.
- Stanganelli I, Argenziano G, Sera F, Blum A, Ozdemir F, Karaarslan IK *et al*. Dermoscopy of scalp tumours: a multi-centre study conducted by the international dermoscopy society. *J Eur Acad Dermatol Venereol* 2012; **26**: 953–963.

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## Chronic Prurigo patients do not report higher impulsiveness or more traumatic life experiences than chronic pruritus patients with non-lesional skin

Dear editor,

Pruritus has been defined as an irritating sensation of the skin, associated with the desire to scratch. However, there are notable clinical differences between pruritus patients: chronic prurigo (CPG) is a chronic pruritic condition associated with extensive scratching, which leads to the development of the typical pruriginous lesions.<sup>1</sup> In the classification of the International Forum

for the Study of Itch (IFSI), CPG is therefore classified in group III ‘Chronic Pruritus with chronic scratch lesions’.<sup>2</sup> On the other hand, patients in IFSI group II have generalized pruritus with non-lesional skin, but the reasons for this difference are still poorly understood and need further elucidation.<sup>2</sup>

Up to now, the role of motor impulsiveness and less self-control, possibly resulting from traumatic life experiences,<sup>3</sup> on scratching activity in CPG patients has not been investigated. In other chronic conditions, e.g. chronic pain, a higher prevalence of traumatic life experiences has been reported.<sup>4,5</sup>

Therefore, we intended to investigate whether impulsiveness and traumatic life experiences are more common in patients who scratch extensively (here CPG) when compared to patients with chronic pruritus (CP) on non-lesional skin.

One hundred twenty patients with chronic prurigo (IFSI group III; 60 male and 60 female) were compared to 120 patients with chronic pruritus from IFSI group II (60 male and 60 female). The patients were selected from the database of the Center of Chronic Pruritus and addressed by mail.

After informed consent, all subjects filled in questionnaires regarding sociodemographic aspects, the Childhood Trauma Questionnaire<sup>6</sup> (CTQ), the Trauma History Questionnaire<sup>7</sup> (THQ) and the Baratt Impulsiveness Scale<sup>8</sup> (BIT). They answered seven questions regarding their scratching or skin manipulating behaviour (a–f in Table 1) and were asked to assess their average pruritus in the last 24 h between 0 (none) and 10 (maximum pruritus) on a Visual Analogue Scale.

Chronic prurigo and CP patients did not differ significantly in sociodemographic characteristics and age. Although CPG and CP patients reported comparable itch intensity, the self-reports on scratching differed significantly between CPG and CP (Table 1).

The overall impulsiveness and most of the BIS-subcales (especially motor impulsiveness and self-control) were not significantly different between CPG and CP. Only the subscale ‘cognitive instability’ was significantly higher in CP than in CPG (Table 2). Also, there were no significant differences between chronic pruritus and chronic prurigo patients regarding the number of traumatic life experiences (Table 2).

In order to predict the membership in the CPG or CP group, we entered the previously hypothesized explaining variables BIS-motor impulsiveness, BIS-self-control, CTQ and THQ total scores into a discriminant analysis, which resulted in the following statistics: eigenvalue 0.017; canonic correlation 0.018; Wilk’s lambda 0.08; and chi-square for Wilk’s lambda 3.90;  $P < 0.420$ . These and the classification result (only 55.1% of the patients were correctly classified as CP or CPG, while the a priori probability for the subgroup membership was 50%) showed no significant contribution of the independent variables for the category CPG or CP.

As a conclusion, we found no evidence that more traumatic life events and/or higher motor impulsiveness/lower self-control

**Table 1** Sample characteristics and characteristics of pruritus/scratching behaviour in Chronic Prurigo (CPG) and Chronic Pruritus (CP) patients

	Chronic Prurigo		Chronic Pruritus		Statistics		
	Chronic (CPG) (n = 120) Mean	SD	Chronic (CP) (n = 120) Mean	SD	T-test		
					T		P
Age	61.98	11.3	62.07	11.3	-0.06		0.950
Average pruritus intensity in the last 24 h (Visual Analogue Scale; 0–10)	4.77	2.8	4.39	2.5	1.08		0.281
					Chi-square test		
Sociodemographic characteristics	n	%	n	%	Chi-square	df	P
Family status: married	80	66.7	91	75.8	2.46	1	0.117
Education level: high school degree	18	15	27	22.5	2.22	1	0.137
Professionally working	37	30.8	42	35.0	0.47	1	0.492
Scratching behaviour							
Scratch, rub etc? <sup>a</sup>	115	95.8	100	83.3	10.05	1	<b>0.002</b>
Remove bumps/impurities? <sup>b</sup>	102	85.0	53	44.2	43.74	1	<b>0.001</b>
Harm your skin till scars develop? <sup>c</sup>	105	87.5	51	42.5	53.41	1	<b>0.001</b>
Relief by scratching? <sup>d</sup>	94	78.3	79	65.8	4.66	1	<b>0.031</b>
Several hours/d? <sup>e</sup>	43	35.8	27	22.5	5.16	1	<b>0.023</b>
Obsessive/ compulsive? <sup>f</sup>	71	59.2	41	34.2	15.07	1	<b>0.001</b>
Social conflicts? <sup>g</sup>	38	31.7	10	8.3	20.42	1	<b>0.001</b>

<sup>a</sup>Do you repeatedly scratch, rub, touch or sting the itching skin?

<sup>b</sup>Do you intend to remove small bumps or impurities by doing this?

<sup>c</sup>Do you harm your skin by this behaviour so that scars occur or the skin colour changes?

<sup>d</sup>Do you experience joy, satisfaction or relief by scratching, rubbing, touching or stinging your skin?

<sup>e</sup>Does this sometimes keep you occupied for several hours a day?

<sup>f</sup>Do you have the impression that this behaviour is obsessive/compulsive?

<sup>g</sup>Does this behaviour lead to anger or conflicts with your family or friends? Did it lead to problems at your working place?

Bold indicate significant results (*P*-value < 0.05).

**Table 2** Impulsiveness and traumatic life experiences in Chronic Prurigo (CPG) and Chronic Pruritus (CP) patients


	Chronic Prurigo		Chronic Pruritus		Statistics	
	Mean	SD	Mean	SD	T	P
<b>Barratt Impulsiveness scale (BIS)</b>						
Higher scores = higher impulsiveness						
Attention (5–20)	10.30	2.6	10.62	2.3	-1.02	<i>n.s.</i>
Motor impulsiveness (7–28)	13.25	3.1	13.72	2.9	-1.21	<i>n.s.</i>
Self-control (6–24)	12.63	3.6	12.22	3.0	0.99	<i>n.s.</i>
Cognitive complexity (5–20)	12.45	2.1	12.40	1.9	0.19	<i>n.s.</i>
Perseverance (4–16)	7.25	1.4	7.21	1.5	0.21	<i>n.s.</i>
Cognitive instability (3–12)	5.25	1.6	5.94	1.5	-3.48	<b>0.001</b>
<b>BIS-Sum (range 30–120)</b>	61.13	8.6	62.11	7.7	-0.92	<i>n.s.</i>
<b>Childhood Trauma Questionnaire (CTQ)</b>						
Emotional abuse	7.70	3.9	8.23	4.1	-1.02	<i>n.s.</i>
Physical abuse	6.60	3.2	6.62	2.8	-0.05	<i>n.s.</i>
Sexual abuse	5.31	1.4	5.28	1.3	0.19	<i>n.s.</i>
Emotional deprivation	10.74	4.6	10.70	4.7	0.07	<i>n.s.</i>
Physical deprivation	7.99	2.8	8.06	3.0	-0.19	<i>n.s.</i>
<b>CTQ-Sum (range 25–125)</b>	38.33	11.8	38.87	11.6	-0.36	<i>n.s.</i>
<b>Trauma History Questionnaire (THQ)</b>						
Crimes (0–4)	0.36	0.7	0.47	0.8	-1.09	<i>n.s.</i>
General catastrophes and trauma (0–13)	2.46	2.1	2.54	1.8	-0.33	<i>n.s.</i>
Physical and sexual trauma (0–6)	0.34	0.7	0.43	1.0	-0.79	<i>n.s.</i>
<b>THQ-Sum (range 0–23)</b>	3.33	2.9	3.63	2.8	-0.83	<i>n.s.</i>

are associated with the extensive scratching in CPG and resulting in the development of the typical chronic prurigo lesions.

Whether traumatic experiences are more common in CP and/or CPG when compared to population, samples cannot be answered from our data, as our study did not include a general population control group. Also, impulsiveness was measured by a self-report scale which might not be specific enough for pruritus patients, not by objective behavioural measures. Also, the trauma history was self-reported and might be affected by inaccurate memories. On the other hand, police or trial records would be affected by the many cases which are never reported.

### Conflict of interest

Gudrun Schneider, Reinhold Steinbach and Astrid Stumpf have nothing to disclose. Sonja Ständer reports personal fees from Almirall, personal fees from Beiersdorf, personal fees from Bellus Health, personal fees from Cara Therapeutics, personal fees from Celgene, personal fees from Galderma Laboratorium, personal fees from Clexio Biosciences, personal fees from LEO, personal fees from Menlo Therapeutics, personal fees from Novartis, personal fees from Sienna Biopharmaceuticals, personal fees from Trevi Therapeutics, personal fees from Vanda Pharmaceuticals, other from Dermasence, other from Kiniksa, other from Galderma, personal fees from Galderma S.A., other from Menlo Therapeutics, other from Novartis and other from Trevi Therapeutics, outside the submitted work.

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### References

- Pereira MP, Steinke S, Zeidler C *et al*. EADV Task Force Pruritus group members. European academy of dermatology and venereology European prurigo project: expert consensus on the definition, classification and terminology of chronic prurigo. *J Eur Acad Dermatol Venereol* 2018; **32**: 1059–1065.
- Ständer S, Weisshaar E, Mettang T *et al*. Clinical classification of itch: a position paper of the International Forum for the Study of Itch. *Acta Derm Venereol* 2007; **87**: 291–294.
- Richard-Lepourel H, Kung AL, Hasler R *et al*. Impulsivity and its association with childhood trauma experiences across bipolar disorder, attention deficit hyperactivity disorder and borderline personality disorder. *J Affect Disord* 2019; **244**: 33–41.
- Afari N, Ahumada SM, Wright LJ *et al*. Psychological trauma and functional somatic syndromes: a systematic review and meta-analysis. *Psychosom Med* 2014; **76**: 2–11.
- Burke NN, Finn DP, McGuire BE, Roche M. Psychological stress in early life as a predisposing factor for the development of chronic pain: Clinical

and preclinical evidence and neurobiological mechanisms. *J Neurosci Res* 2017; **95**: 1257–1270.

- Bernstein DB, Stein JA, Newcomb D *et al*. Development and validation of a brief screening version of the Childhood Trauma Questionnaire. *Child Abuse Negl* 2003; **27**: 169–190.
- Hooper LM, Stockton P, Krupnick JL, Green BL. Development, use, and psychometric properties of the Trauma History Questionnaire. *J Loss Trauma* 2011; **16**: 258–283.
- Barratt ES. Impulsiveness and aggression. In Monahan J, Steadman H, eds. *Violence and Mental Disorder: Developments in Risk Assessment*, Vol. 10. University of Chicago Press, Chicago, IL, 1994, 61–79.

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## Catastrophizing thinking towards itch and pain in chronic itch patients

Dear Editor,

Pain catastrophizing (PC) represents cognitions towards pain which encompass both appraisals which constitute that pain is horrifying, and difficulties in recruiting positive coping mechanisms.<sup>1,2</sup> Higher PC is also associated with greater risk for chronic pain disorders.<sup>3</sup> The pain catastrophizing scale (PCS) comprises three dimensions: rumination, magnification and helplessness; encompassing cognitive representations associated with pain.<sup>1</sup> Similarly, itch has an inherently aversive component which may be shaped by catastrophizing thinking. In addition, there is a close interaction between itch and pain attributable to peripheral and central pain modulation processes,<sup>4,5</sup> and perceived severity of both has been linked with negative expectations.<sup>6</sup> The effects of catastrophizing thinking on the perception of chronic itch symptom perception however have rarely been investigated. Hence, we explored, in chronic itch patients, whether itch symptoms and pain perception are affected by psycho-cognitive parameters of catastrophizing thinking for both itch and pain. Patients ( $n = 59$ ) with psoriasis, atopic dermatitis or dry skin disorders with itch of  $\geq 4$  (0–10 itch numerical rating scale) and minimum of two daily itch episodes per week<sup>7,8</sup> were included. Itch degree was defined as the mean of itch intensity, frequency and duration. Severity of skin disease related to affected body surface area (%) and degree of disease severity. Patients completed the PCS<sup>1</sup> and Itch catastrophizing scale (ICS), in which we replaced the word *pain* with *itch* in each of the PCS items, allowing for a recounting of patient itch symptom experience. Brief Pain Inventory (BPI) assessed intensity and interference of occasional pain. Analysis showed no difference between patients with mild or moderate/severe lesions for itch intensity, frequency or attack duration. The moderate correlation found between ICS and PCS ( $r = 0.500$ ,  $P = 0.001$ ) for