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REVIEW ARTICLE

Interplay of Itch and Psyche in Psoriasis: An Update

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Itch or pruritus is defined as an unpleasant subjective sensation leading to the need or to the idea of scratching. A number of studies have shown that pruritus is often responsible for marked morbidity, quality of life impairment, and even for increased mortality. Patients suffering from chronic pruritus had also decreased self-esteem, suffer from anxiety or depression and have problems to cope with negative feelings. Several studies documented that itching is a very prevalent symptom of psoriasis affecting more than 70% of individuals and for many patient it is the most bothersome symptom of the disease. While assessing various aspects of itch in psoriatic patients it was found that individuals with pruritus had a significantly lower health-related QoL; patients with pruritus, moreover, were more depressed than those without itching. In conclusion, pruritus is closely related to decreased psychosocial well-being of patients with chronic pruritic skin diseases, including psoriasis. It is important to underscore that itch may interfere with various aspects of patient functioning, emotions and social status and should therefore be adequately addressed while treating patients with psoriasis. ***Key words: pruritus; quality of life; anxiety; depression.***

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Itch or pruritus is defined as an unpleasant subjective sensation which is causing an urge to scratch (1). It can be localized or generalized, acute (i.e. lasting less than 6 weeks) or chronic (i.e. lasting more than 6 weeks). Pruritus is a very common symptom in dermatology accompanying a number of skin disorders; scabies, atopic dermatitis, eczema, urticaria, psoriasis, pemphigoid, dermatitis herpetiformis or lichen planus being the most commonly mentioned (2). However, itching may also be present in a long list of primary non-dermatological conditions, such as polycytaemia vera, Hodgkin disease, chronic renal failure, cholestasis, hypothyroidism and many others (1, 2). A number of studies have shown that pruritus is often responsible for marked morbidity, quality of life (QoL) impairment, and, in some patient population, even for increased mortality (3, 4). Patients suffering from chronic pruritus develop also poor self-esteem, shame, often demonstrating symptoms of anxiety and depression and having problems to cope with aggression and other negative feelings (4–6). In the following, we have reviewed current literature data on the relationship between itching and psychosocial well-being in patients suffering from psoriasis.

THE BURDEN OF ITCH IN PSORIASIS

For a long time psoriasis was considered as a chronic dermatosis which typically does not itch. However, several more recent studies documented that itch is a frequent phenomenon in plaque type psoriasis affecting about 70–80% of individuals (7–10). Such discrepancy might be explained by changes in the lifestyle, higher stress or greater exposure to pollutants in our daily life, which possibly might modulate perception of pruritus. Furthermore, pruritus in psoriasis is usually less severe than in atopic dermatitis or lichen planus, thus, it is possible that physicians were less likely to focus their attention on this symptom of psoriasis in the past. However, in a recently performed study we observed that pruritus was considered by the majority of patients as the most bothersome symptom accompanying psoriasis (11). Indeed, pruritus was seen as more important than skin redness, skin burning, dandruff and nail abnormalities, pain, joint stiffness or sleeping difficulties. Only intense skin flakeing rated slightly higher than pruritus as the most disturbing psoriasis symptom (11). The relevance of itch in psoriasis has also been pointed by other authors, even though its intensity seems to be lower than in other dermatological conditions with itch-like e.g. atopic dermatitis (10, 12–14). However, it is difficult to directly compare itch intensity between different conditions, as itch is a purely subjective sensation and may be perceived differently in different dermatoses. Furthermore, comparing the intensity of itch among various dermatological diseases raises significant methodological questions (e.g. differences regarding the duration of itch episodes, location, concomitant sensations, etc.) making any analyses even more challenging. It was also shown that itch correlated with QoL to greater extent ($R = 0.55$) than pain ($R = 0.46$) or fatigue ($R = 0.38$) (10). Importantly, Amatya et al. (15) documented that a majority of patients with psoriasis shared the opinion that pruritus negatively affected their QoL, with a major impact on mood, concentration, sleep, sexual desire and appetite. In a very

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recent study, Bundy et al. (16) analysed patients' personal models of the disease by inviting psoriatic individuals to 'Write a letter to their psoriasis describing how it makes them feel and think, and how it has impacted their life'. Remarkably, postcards were often dominated by the word 'itch', despite people being told by clinicians that itch is not a symptom of psoriasis. This finding underlines again, how important itch is for psoriatic subjects.

When assessing various aspects of itch in psoriasis patients we have found that individuals with pruritus had significantly lower health-related QoL (HRQoL) compared to patients without pruritus – mean DLQI scoring for patients with itch was 12.2 ± 7.0 points (on average, very large effect on patient's life) and for patients without itching 6.8 ± 7.1 points (on average, moderate effect on patient's life) ($p = 0.02$) (4). Pruritus intensity significantly correlated with QoL impairment ($R = 0.43$, $p < 0.0001$) and with the feelings of stigmatization ($R = 0.37$, $p < 0.001$) and such domains like "feeling of being flawed" and "secretiveness" seemed to be first of all influenced by itching (4).

Patients with pruritus were also more depressed than those without itching and, accordingly, depressive symptoms significantly correlated with itch intensity ($R = 0.43$, $p < 0.001$). However, as demonstrated by Gupta et al. (12, 16), depression seems to be rather predictive of, than a consequence of pruritus in psoriasis. The presence of depression in psoriasis modulates itch perception, exacerbates pruritus, and leads to difficulties with initiating and maintaining sleep (17). Prospectively, the change in depression scores correlates with the change of pruritus in psoriatic individuals (12). In a study involving 38 individuals it was shown that adding an anti-depressive drug (escitalopram) to the standard anti-psoriatic therapy, caused significant reduction of depressive and anxiety symptoms which was accompanied by the improvement of pruritus (18). Hence, psychological interventions and antidepressant medications are likely to improve perceived symptom severity and QoL of patients with psoriasis (18), but it must be underlined, that antidepressants may also directly modulate production of cytokines and thus act on the course of psoriasis (19).

Not only depression may influence pruritus severity, but also emotional stress seems to be of relevance. In one of our studies, pruritus intensity correlated with the degree of emotional stress prior to disease exacerbation ($R = 0.32$, $p < 0.01$) (4). Those who experienced severe or very severe stress before disease outbreak significantly more often suffered from pruritus than those who did not reported any stressful life event prior to psoriasis exacerbation (20). Similarly, Vorhoeven et al. (21) found, that patients experienced not only more severe disease, but also more itch when they reported the highest level of daily stressors and the level of daily stressors correlated with scratching behaviour. Four personality traits were significantly associated with severe pruritus: "somatic trait anxiety", "embitterment", "mistrust" and "physical trait aggression" (22). In another study, psoriasis patients with most frequent pruritus have been found to appraise their underlying disease significantly more frequently in terms of a threat, obstacle/loss, and harm, as compared with the patients with less frequent pruritus (23). In addition, patients with psoriasis who experienced pruritus all the time more often developed "resignation" and "self-blame" as coping strategies with the disease (23). As a consequence, patients suffering from itch may withdraw from activities (24). We have also shown that itch interferes with work ability and nearly a half of the observed individuals indicated pruritus as representing the most vexing symptom during their work (25). In addition, vulvar itching associated with psoriasis frequently causes problems in sexual life, another important aspect of QoL (26). Patients with vulvar itching were also more depressed that those without itch (26). As reported by other authors, pruritus caused 35% of patients to be more agitated, 24% to be depressed, 30% to have difficulties in concentrating due to pruritus, 23% changed their eating habits and 35% of patients reported their sexual functioning to be impaired or even non-existent due to pruritus (7).

The importance of itch in psoriasis is confirmed not only by observational studies, but also from data from clinical trials showing significant improvement of patients' well-being upon pruritus reduction. Mrowietz et al. (26), when performing a *post-hoc* sub-analysis of PRISTINE study, showed that itch was significantly associated with all analysed patient reported outcomes, namely with QoL impairment, anxiety, sleep and fatigue. Even more importantly, patients with clinically meaningful lowering of their pruritus scores at week 24 reported significant improvement of all measures of patients' psychic status (27). Similarly, Zhu et al. (27) after adjusting for improvement in disease severity and performing multiple hierarchical linear regression analyses found association between the improvement in pruritus and the improvement in DLQI total score and each of the 6 QoL domain scores. Interestingly, as they observed, pruritus had a significant modulating effect on the association of disease severity improvement with improvement in QoL (27). Our group also observed that treatment benefits assessed according to Patient Benefit Index for Pruritus (PBI-P) (28) was linked with marked anxiety and depression reduction as well as with QoL recovery (unpublished observations, data on file).

FUTURE PERSPECTIVES

Future studies should put more efforts to further explore the pathogenesis of itch in psoriasis, as this is the best way to develop better treatment strategies to control this symptom. In addition, it is necessary to further characterise the influence of itch reduction on the improvement

of psoriatic patients' wellbeing irrespective of the improvement of psoriatic lesions. Psoriatic patients should also receive more assistance and education how to cope with daily stressors to reduce the intensity of pruritus, not only because of better controlling of skin lesions but also because of psychosocial support.

CONCLUSIONS

Pruritus is closely related to decreased psychosocial well-being of patients with chronic pruritic skin diseases, including psoriasis. Itch may interfere with various aspects of patient functioning, emotions and social status. An adequate treatment of any chronic dermatosis which is accompanied by significant subjective symptoms, requires focusing not only on the improvement of the skin lesions, but also on the effective controlling of all itching and burning sensations. Thus, any future clinical trials on psoriasis should include pruritus reduction as one of the important end points supporting the efficacy of any tested therapy.

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