Future Trends in Psychodermatological Psoriasis Research: Somatopsychic or Psychosomatic Focus?

The increasing acceptance of recognizing the value of quality of life (QoL) studies in psoriasis treatment research suggests the somatopsychic view to be the most important psychodermatological aspect. In a recent study on 6,194 severely affected psoriasis patients, Krueger et al. [2001] described that 79% reported psoriasis to have a negative impact on their lives. Consistent with this high percentage, various treatment studies have included measurement of the QoL of psoriasis patients [e.g., Touw et al., 2001; de Korte et al., 2002]. However, you have to keep in mind that QoL is not the only relevant somatopsychic aspect of psoriasis remembering, among others, the stigmatization feeling [e.g., Ginsburg and Link, 1993; Vardy et al., 2002; Srebrnik et al., 2003], depression [e.g., Gupta and Gupta, 1999; Pacan et al., 2003] and, to a certain extent, itching [e.g., Gupta and Gupta, 1999; Reich et al., 2003].

However, recent psychoneuroimmunological studies point out new psychosomatic connections going beyond questions of conflict or personality specificity [Kiecolt-Glaser et al., 2002]. As Misery [2001] stated, biochemical factors can translate an emotion or stress to a cutaneous lesion. Especially neuropeptides are thought to be involved in the pathophysiology of different skin diseases, including psoriasis [Chan et al., 1997]. Meanwhile some additional psychoneuroimmunological findings in healthy subjects can supplement the pathophysiology of psoriasis which is now considered to be a mainly lymphocyte-mediated disease [Griffiths, 2002]. Transepidermal water loss (TEWL) is increased in psoriasis. In addition, the extent of the barrier abnormality and the severity of lesional phenotype correlate in psoriasis [Fleischmajer et al., 2000]. Using the paradigm of academic stressors Garg et al. [2001] assessed the barrier function in 27 students during, 4 weeks before, and 4 weeks after final examinations, i.e. an initial period of presumed lower stress (LS1), of higher stress (HS), and a period of presumed reinstated lower stress (LS2). Psychological stress assays included the Profile of Mood States (POMS) and the Perceived Stress Scale (PSS) at each of the 3 time points. Permeability barrier homeostasis measured by TEWL was studied at 0, 3, 6 and 24 hours after barrier disruption with cellophane tapes. Comparing lower (LS1 and LS2) and higher stress (HS), the permeability barrier recovery was significantly lower in HS compared to LS1 and LS2. In addition, at 3 hours after barrier disruption, a strong correlation was revealed between changes in barrier homeostasis from the LS1 to the HS period and the changes in levels of stress operationalized by the POMS total score (total mood disturbance), but not by PSS. The authors observed that the subjects demonstrating the greatest increase in mental stress also showed the highest abnormality in barrier recovery rates. At the follow-up (LS2), the subjects again demonstrated significantly lower POMS and PSS values as well as improved permeability barrier recovery rates. It is remarkable that the basal permeability rates did not differ significantly between LS1, LS2 and HS. This underlines the necessity of a dynamic approach which is inherent in psychoneuroimmunological research.

Stress-related modulation of matrix metalloproteinase (MMP) 2 expression in healthy volunteers has also been revealed [Yang et al., 2002]. MMP-2, important for cutaneous wound healing, is overexpressed in involved and uninvolved epidermis of psoriasis patients [Fleischmajer et al., 2000]. Using the Beck Depression Inventory (BDI) as a measure of psychic distress, Yang et al. studied 51 subjects showing a normal range of depressive symptoms. Considering the skin type, a blister chamber wound model was used after UV-B radiation. The authors did not find a reliable association between BDI scores and modulation of MMP-2 protein levels. However, they could reveal plasma norepinephrine levels to be significantly positively and plasma cortisol levels to be significantly negatively associated with MMP-2 expression. Yang et al. con-
clude that the activation of the hypothalamic-pituitary-adrenal (HPA) and the sympathetic-adrenal medullary (SAM) axes can modulate MMP protein levels.

The study of Schommer et al. [2003] is relevant in this context, focusing the reactivity of the HPA and SAM axes to repeated psychosocial stress. They examined 65 healthy subjects 3 times in an established psychological laboratory stress model (Trier Social Stress Test) with a 4-week interval between stress exposures. Concerning the salivary free cortisol responses, they found that the 'high' and 'low' responders differ only in ACTH and total plasma cortisol responses but not in epinephrine/norepinephrine and heart rate responses. In addition, they found a significant decrease of salivary free cortisol, total plasma cortisol, ACTH, and heart rate stress responses for the total study group across the 3 stress exposures but not for catecholamines. It can be concluded that different habituation patterns of the HPA and SAM axis have to be considered in repeated stress exposures of healthy persons. It would be interesting to study these questions in psoriasis patients as well to have a clue on basic pathophysiologic mechanisms.

Summarizing, quality of life in future psoriasis research will have to be one important psychodermatological view; however, the psychosomatic focus of psychoneuroimmunology will also be relevant enabling to describe somatic mechanisms underlyng the link between psychic stress and exacerbation or maintenance of psoriasis.

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References


