

## Cardiovascular Complications of Psoriasis: Does Obstructive Sleep Apnoea Play a Role?

Sir,

There are considerable data to suggest that patients with psoriasis are at greater risk of developing diabetes, obesity, heart insufficiency and occlusive vascular disease than non-psoriatic dermatological patients (1–3). It has been hypothesized that clot formation following abnormal arachidonic acid and cyclic nucleotide metabolism or blood hyperviscosity in psoriasis might be responsible for the increase in susceptibility of the psoriatic population to occlusive vascular disease (2–4). Since occlusive vascular disease, heart insufficiency and obesity are also related to obstructive sleep apnoea (5), which is the most common organic sleep disorder, especially in middle-aged obese men aged 35 years and over and women aged 50 years and over (6), we were interested in the prevalence of obstructive sleep apnoea (OSA) in patients with psoriasis.

### MATERIAL AND METHODS

We investigated 25 adult patients with psoriasis and 19 age- and sex-matched patients with chronic bronchitis, a disease that is known to be positively correlated with OSA (7). All patients were referred to the clinic because of their skin or lung disease. Male patients aged 40 years and over who gave at least two signs and symptoms suggestive of, or associated with, OSA, e.g. snoring, witnessed breathing stops during the night, excessive daytime sleepiness, obesity, hypertension, cardiac arrhythmias, myocardial infarction or stroke (5) were included in the study.

The sleep studies were done by polysomnography (Sensor Medics) on two consecutive nights in our sleep research laboratory and included continuous monitoring of EEG, EOG, EMG, ECG, snoring microphone and finger oximeter.

### RESULTS AND DISCUSSION

An OSA (apnoea index [AI] > 10/h sleep) was observed in 9/25 (36%) of patients with psoriasis and in 6/19 (32%) of patients with chronic bronchitis. The apnoea index was higher in patients with psoriasis than in those with chronic bronchitis (AI:  $14.4 \pm 13.5$  vs.  $8.8 \pm 13.4$ ;  $p=0.028$ ) (Mann-Whitney Rank Sum Test). Neither group differed in other risk factors of OSA, such as BMI or hypertension. As OSA may trigger obstructive vascular disease and is associated with internal disorders that are also frequently found in patients with psoriasis, the signs and symptoms of OSA have to be considered by dermatologists, especially in male patients with psoriasis aged 40 years and over. Surprisingly to us, there is some clinical evidence that successful treatment of OSA in patients with psoriasis, e.g. by nasal continuous positive airway pressure (nCPAP) device, may improve the patient's response to anti-psoriatic treatment and prolong the patient's disease-free period of time. We followed the course of three psoriatic

patients with recalcitrant chronic stable psoriasis and concomitant OSA. At first, their skin did not respond well to topical treatment with corticosteroids, UVR and orally administered retinoids, but they improved markedly after addition of nCPAP therapy. One year later all patients were still on nCPAP and presented with only mild psoriatic skin changes. Two of them stated that they could not remember their psoriasis being so well for years. Further studies are needed to evaluate these clinical observations.

OSA leads to severe physical and, possibly, psychological stress to the body, e.g. by hypoxaemia, increased blood pressure, tachycardia, sleep fragmentation, reduction of deep sleep, reduction of REM sleep, hypersomnia and insomnia. OSA also dysregulates the function of the patient's autonomic nervous system and hormone system. This dysregulation might alter the homeostasis of the immune neuroendocrine network in the skin and thus may support the manifestation of psoriasis in the genetically predisposed individual, e.g. by secretion of proinflammatory neuropeptides (8). We therefore speculate that OSA may act as a triggering factor for psoriasis.

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Accepted October 15, 1998.

Michael Buslau<sup>1</sup> and Kada Benotmane<sup>2</sup>  
Departments of, <sup>1</sup>Dermatology and <sup>2</sup>Respiratory Medicine, SANITAS Alpenklinik Inzell, Centre of Sleep Research, Schulstr. 4, DE-83334 Inzell, Germany. E-mail: M.Buslau@t-online.de.