



ATOPIC ECZEMA/DERMATITIS

## SLEEP DISORDERS IN PATIENTS WITH ATOPIC DERMATITIS: INTEREST OF ACTIGRAPHY AND A SMARTPHONE APPLICATION

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Introduction: Atopic dermatitis (AD) is a chronic inflammatory disease of the skin with a significant impact on the quality of life and sleep.

Objective: To evaluate and compare sleep of patients with AD versus healthy volunteers using wrist actigraphy and a smartphone application.

Materials and Methods: 32 patients (EASI score  $\geq 7.1$ -IGA  $\geq 3$  and BSA  $\geq 10$ ) and 20 HV were included. Sleep data were recorded during 14 days (Actisleep smartphone application, morning and evening) and 14 nights (Motionwatch8, CamNtech, Cambridge, United Kingdom). Parameters analysed were Total Sleep Time (TST), Sleep Efficiency (SE), time in bed (TIB), Wake-up After Sleep Onset (WASO), number and duration of awakenings, and the Fragmentation Index (FI). The severity of the disease was assessed at the beginning of the study and the intensity of pruritus daily. Quality of Life (DLQI) was also assessed.

Results: 78% of patients and volunteers used the application (70% for the actigraphy) and had actionable data ( $\geq 5$  consecutive nights of registration and 2 days of weekend for both devices). TST was significantly lower in patients: 5.9 hours  $\pm$  1.5 versus 6.6 hours  $\pm$  0.6 ( $p = 0.02$ ). WASO was significantly higher: 1.3  $\pm$  0.9 versus 0.5  $\pm$  0.4 ( $p = 0.002$ ). Patients had a lower SE : 73.2% vs 86% ( $p = 0.0018$ ) and had a higher FI : 43 vs 25.6 ( $p = 0.004$ ). Unsurprisingly, the DLQI questionnaire reported an alteration of the quality of life in patients versus volunteers. Smartphone data were strongly correlated with those of actimetry: bedtime ( $r = 0.85$ ), falling asleep ( $r = 0.83$ ), waking up ( $r = 0.92$ ), rising ( $r = 0.92$ ), TST ( $r = 0.65$ ) and time spent in bed ( $r = 0.94$ ).





Conclusions: Patients with moderate to severe AD have a significantly more impaired sleep than healthy volunteers, qualitatively and quantitatively.

