

# Association of SUDOSCAN values with disease duration in Korean patients with fibromyalgia

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**Background/Aims:** Fibromyalgia is characterized by chronic widespread pain. The patients with fibromyalgia complain of symptoms such as fatigue, sleep disturbance and intermittent palpitation, suggesting the potential contribution of autonomic dysfunction in the pathogenesis of the disease. Although dysfunction of autonomic nervous system is common in fibromyalgia patients, there is still a lack of simple methods for the assessment of autonomic dysfunction in the disease. Assessment of sudomotor function has been recently proposed to explore peripheral autonomic sympathetic function. In the present study, we investigated the sudomotor function by using a rapid, objective and non-invasive method in female patients with fibromyalgia. **Methods:** Cross-sectional study included 23 female patients with fibromyalgia (mean age  $51.1 \pm 8.5$ , disease duration  $13.6 \pm 14.7$  months) and 29 age-matched healthy controls (HC) subjects. Electrochemical skin conductance (ESC) of hand and feet were measured with the SUDOSCAN (Impeto Medical, France). Fibromyalgia severity was assessed by fibromyalgia impact questionnaire (FIQ) and pain visual analogue scale (VAS). Toronto clinical neuropathy score (TCNS) was applied in the enrolled subjects. During the sudomotor test, patients were asked to place their bare hands and feet on large electrodes. The test took 2~3 min to carry out without pain. **Results:** Hand and feet ESC values tended to be lower in female patients with fibromyalgia, compared to those of HC subjects, although the differences were not statistically significant. TCNS in fibromyalgia patients was significantly higher than HC subjects ( $7.4 \pm 2.1$  vs.  $1.4 \pm 0.9$ , respectively). There was no association between the hand or feet ESC values and FIQ, pain VAS, TCNS, or body mass index. Interestingly, there were significant negative correlation between fibromyalgia duration and ESC values of hand and feet (spearman's correlation coefficient ; -0.523 and -0.635, respectively). **Conclusions:** Our study identified that this quick and non-invasive method to assess sudomotor function might represent the pathologic changes of autonomic nervous system in female patients with fibromyalgia.

