

Small nerve fiber involvement in systemic lupus erythematosus: A controlled study

Roald Omdal 1 *, Svein Ivar Mellgren 2, Lasse Gøransson 3, Astrid Skjesol 1, Sigurd Lindal 4, Wenche Koldingsnes 4, Gunnar Husby 5

1University of Tromsø, Tromsø, Norway

2University of Tromsø, and University Hospital of Tromsø, Tromsø, Norway

3Rogaland Central Hospital, Stavanger, Norway

4University Hospital of Tromsø, Tromsø, Norway

5National Hospital, Oslo, Norway

email: Roald Omdal (romdal@online.no)

*Correspondence to Roald Omdal, Institute of Clinical Medicine, University of Tromsø, N-9037 Tromsø, Norway

Abstract

Objective

To determine if patients with systemic lupus erythematosus (SLE) may have a peripheral neuropathy involving unmyelinated and small, myelinated nerve fibers, by immunostaining epidermal nerve fibers (ENF) in skin biopsy samples for the panaxonal marker, protein gene product 9.5 (PGP 9.5).

Methods

Fifteen consecutive and nonselected SLE patients and 15 age- and sex-matched controls were included in the study. The age of the patients ranged from 25 years to 65 years, with a mean \pm SD age of 47.3 ± 10.2 years and a disease duration of 2-28 years (mean \pm SD 14.8 ± 8.6 years). Two 3-mm skin biopsy samples were obtained with a punch needle 10 cm superior to the lateral malleolus of the right leg and immunostained with 0.1% rabbit polyclonal antibodies to human PGP 9.5. The number of ENF per millimeter was counted and recorded as the mean \pm SD of counts in six 50- μ m sections, 3 from each of the 2 biopsy samples.

Results

The mean number of ENF per mm in patients with SLE was 8.0 ± 1.5 (range 5.0-9.9), while the matched controls had 12.2 ± 3.8 ENF per mm (range 6.8-18.6) ($P = 0.0006$).

Conclusion

This study indicates that a small fiber involvement in patients with SLE may be responsible for the prevalent neuropathic symptoms and impaired warm sense that is observed in such patients.

Received: 2 October 2001; Accepted: 31 January 2002

<http://dx.doi.org/10.1002/art.10303>

Fulltext not available due to publisher restrictions.