Elevated Tissue Polypeptide Antigen as a Risk Factor for Carpal Tunnel Syndrome in Haemodialyzed Patients

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Dear Sir,

To date the duration of haemodialysis (HD) is the only known risk factor for the incidence of carpal tunnel syndrome (CTS), a major complication of long-term HD in patients with end-stage renal failure [1, 2]. Though β_2 -microglobulin (β_2 M) has been repeatedly demonstrated as a component of the amyloid found in CTS [3, 4], β_2 M serum concentrations fail to correlate with the incidence of CTS [4, 5]. Since chronic HD resembles several properties of a low-grade inflammatory process [6], a study was undertaken to correlate the incidence of CTS with serum concentrations of tissue polypeptide Antigen (TPA), a tumor marker which correlates with the extent of cell proliferation and cell turnover [7, 8].

While 86 of 93 patients (92.5%) at an outpatient HD center had TPA serum concentrations above normal (Prolifigene, Sangte Medical, Sweden), no correlation between TPA values and primary renal disease, duration of HD, body weight, creatinine, or blood urea nitrogen could be found. However, when these parameters were examined in 7 patients who recently underwent surgery for CTS, discriminant analysis showed significantly elevated TPA levels and prolonged HD in patients with CTS (univariate statistics) and a superior influence of TPA compared with β_2 M (multivariate statistics) [9] (table I).

It may be concluded that factors other than the accumulation of β_2 M may contribute to the incidence of CTS. While TPA is routinely used for the monitoring of malignancies, it is also known to be elevated during periods of increased cell proliferation [10]. The individual extent of cell turnover caused by the extracorporeal circuit may be estimated by TPA serum concentrations and could thus be an index for the susceptibility of CTS in patients on long-term HD.

Table I. Clinical parameters of patients with and without CTS (mean $\pm$ SD)

Patients with CTS without (n = 7) CTS

(n = 86)

Univariate Multivariate statistics discriminating proportion %

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