Normal concentrations of serum hyaluronic acid in patients with primary fibromyalgia syndrome

Sirs,

The ACR criteria for the fibromyalgia syndrome (FMS) are based on clinical observations and healthy individuals may fulfill these criteria by exaggeration or simulation (1). Thus, objective laboratory parameters would be helpful to more precisely diagnose this chronic pain disorder (2, 3). The serum hyaluronic acid level (S-HA) is a promising candidate for routine clinical use because of potentially perturbed connective tissue metabolism in FMS. Yaron *et al*. described increased S-HA in a group of 42 patients with FMS (4). However, more recent reports demonstrated normal S-HA levels in 53 and 14 FMS patients (5, 6). To definitively resolve this controversy we re-evaluated 75 cases of FMS.

Sera from 71 women and 4 men (52.95 ± 7.84 years) were obtained during a previously conducted study (7). FSM was diagnosed according to the ACR criteria. Disease activity assessment included the visual analogue scale (VAS, 0 to 10) and the pain score (0 -120) according to Müller and Lautenschläger (3). Patients were enrolled in the study after physical examination and routine laboratory testing of the erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), rheumatoid factor and antinuclear antibodies. Twenty-two patients had osteoarthritis of peripheral joints without significant systemic inflammation. Patients with chronic liver diseases were excluded. The control group consisted of 36 women and 2 men (50.0 ± 10.29 years). S-HA was determined by a commercially available radioimmunoassay kit (Pharmacia-Upjohn, Germany). The Student's t-test was performed for comparisons of patient and control groups in cases of normally distributed data and equal variance; otherwise the Mann-Whitney Rank sum test was used. Associations between variables were determined by the Spearman correlation coefficient (r_s).

The results in terms of mean S-HA levels are shown in Figure 1. Patient mean values (43.3 µg/l ± 7.07) did not significantly differ from age-matched healthy controls (32,1 µg/l ± 3.05). In 6 FMS cases S-HA levels (214.2 µg/l ± 45.1) were above the normal range of 100 µg/l (Fig. 1). This subgroup (8%) did not differ significantly from the total patient group with respect to disease duration, values for the VAS, and the pain score. Five of these FMS cases had documented osteoarthritis of the peripheral joints with moderately elevated CRP, in agreement with an on-going acute bacterial infection (n = 1) or an isolated, moderately elevated ESR of unknown origin (n = 1). One of these patients did not show any laboratory pathology or clinically evident disease other than FMS.

Our findings hence did not show a correlation of S-HA and FMS. These results are similar to previous reports, which however were limited to considerably fewer patients (5, 6, 8). Since we used exactly the same assay procedure as Yaron *et al*., the divergent results cannot be explained by differences in the assay protocol. Our data also demonstrated an age-dependent increase in S-HA levels (patient group r_s = 0.37, p = 0.005 and control group r_s = 0.53, p = 0.001) in accordance with previous reports (9, 10). Pathologically elevated S-HAlevels (214.2 µg/l ± 45.1) in the subgroup were higher when compared to RA patients determined by our group earlier (152.3 µg/l ± 23.8; n = 56) (10) but lower when compared to Yaron and co-workers. In addition, 17 FMS patients from our study group with normal S-HA levels had a similar medical profile (i.e., osteoarthritis and moderately elevated CRP) to the patient group with high S-HA, suggesting that numerous factors influence S-HA levels. Based on the data from the substantial number of cases examined in our study, we conclude that S-HAis not a diagnostic marker of FMS.

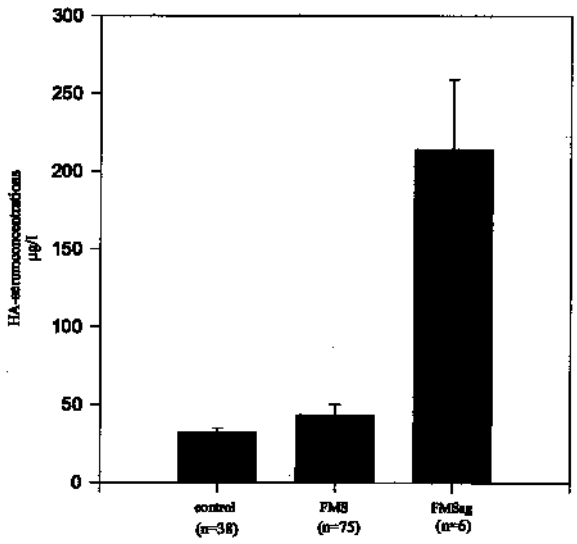

Fig. 1. Serum concentrations of hyaluronic acid (S-HA) in patients with fibromyalgia syndrome (FMS) and age-matched healthy controls. Patients with FMS were diagnosed according to the ACR criteria. S-HA levels were determined by RIA. The bars show the mean S-HA values with standard deviations. Patients with FMS (43.3 µg/l ± 7.07) did not differ significantly from age-matched controls (32.1 µg/l ± 3.05). A subgroup of 6 patients (FMSsg) showed pathologically elevated S-HA levels (214.2 µg/l ± 45.1).

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