Letters to the Editor

Synovial immunoreactive beta-endorphin levels in rheumatoid arthritis and osteoarthritis

Sir,

The role of beta-endorphin (BE) in the pathogenesis of inflammation and the mechanism of its analgesic action are exciting subjects, neither of which have been fully elucidated as yet. Recently Conti et al. reported that BE levels are decreased in chronic fatigue syndrome (1). There are only few studies in the literature focusing on the presence of BE levels in synovial fluid or synovial tissue and mainly in the cerebrospinal fluid (CSF). Denko et al. found higher BE levels in the synovium of rheumatoid arthritis (RA) patients compared to osteoarthritis (OA) patients (2). The presence and analgesic action of opioid peptides in the inflamed tissues have been demonstrated by Stein et al. (3). In RA, according to Suzuki’s studies on synovial fluid and Yoshino’s studies on synovial culture supernatant, BE levels are elevated in both according to Suzuki’s studies on synovial fluid and Stein’s artesis that BE may act as a proinflammatory mediator, or exert an anti-inflammatory action depending on its tissue concentration (6). Depending on the anti-serum used to perform the assay, these (and our previous) results suggest that the synovial BE level is much higher compared to the serum and CSF levels. The mechanism of the analgesic action of BE is extremely complicated. BE levels are presumed to be reduced in the cerebrospinal fluid of patients with chronic pain syndromes. Direct monitoring of BE levels in the cerebrospinal fluid is extremely difficult in humans; however, the evaluation of changes in peripheral tissues could yield valuable information. Opioid peptides are present in inflamed synovial tissues. Besides the gate control theory of pain, the peripheral action of BE plays an important role (inhibiting nociception) in decreasing the pain in the peripheral tissue. In conclusion, the role of BE in the pathogenesis of inflammation as well as the mechanism of its analgesic action are exciting research topics worth further investigation.

References

Table I. Synovial fluid beta endorphin (BE) and ESR levels in RA and OA.

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<th>RA (n = 9)</th>
<th>OA (n = 9)</th>
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<tr>
<td>BE</td>
<td>75.2 ± 20.8 fmol/l (synovial fluid)</td>
<td>96.8 ± 41.79 fmol/l (synovial fluid)</td>
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<td>ESR</td>
<td>62 ± 22.6 mm/ 1 hr</td>
<td>12 ± 12.7 mm/ 1 hr</td>
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