

# Low blood and synovial fluid levels of sulpho-conjugated steroids in rheumatoid arthritis

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## Abstract

Using radioimmunoassays (RIA) we measured the concentrations of prolactin, cortisol, dehydroepiandrosterone sulphate (DHEAS), pregnenolone sulphate (5-PS) and testosterone sulphate (TS) in peripheral blood and synovial fluid (SF) from 50 patients with arthritis of the knee associated with different diagnoses. These included RA (25 cases); and psoriasis, ankylosing spondylitis, reactive arthritis, post-traumatic arthritis, unspecified polyarthritis, polyarthritis and sacroilitis, and regional enteritis (25 cases). Fifty-six healthy subjects (age 19 to 60 years) were used as controls. No significant difference was found between the blood prolactin levels in patients and controls. The mean levels of cortisol, 5-PS, DHEAS and TS were significantly reduced in the patients with RA (mean 133 vs 286 nmol/l cortisol, 26 vs 80 nmol/l 5-PS, 930 vs 3290 nmol/l DHEAS and 25 vs 40 nmol/l TS; p less than 0.001 for cortisol, 5-PS and DHEAS, and p less than 0.05 for TS). The reduction was more marked in the DHEAS levels in patients with positive rheumatoid factor (RF) reactivity. Patients with diagnoses other than RA had normal levels of the various steroids except patients on steroid treatment, who also exhibited reduced levels. The 5 hormones measured in the SF were found in relatively high concentrations, parallelling those in the blood. The ratios (SF/blood) varied from 0.66 for 5-PS to 1.1 for cortisol, and the correlation coefficients between 0.66 for 5-PS and 0.94 for DHEAS (p less than 0.001). Low blood and SF levels of sulpho-conjugated steroids, particularly DHEAS, are a permanent disorder in patients with RA and positive RF reactivity.(ABSTRACT TRUNCATED AT 250 WORDS)

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PMID: 2533000

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