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Quantitation of glucocorticoid receptor alpha and NF-κB pathway mRNA and its correlation with disease activity in rheumatoid arthritis patients

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ABSTRACT. We measured NF-κB, IKK, c-Fos, and *GRα* mRNA expression and *in vivo* glucocorticoid sensitivity in patients with rheumatoid arthritis. A very low dose intravenous dexamethasone suppression test and real-time PCR quantitation of mRNA of these genes were performed on blood samples from 21 rheumatoid arthritis patients who were not on glucocorticoids during the previous four months and on blood samples from 20 healthy individuals. Mean rheumatoid arthritis duration was 8.8 years, and mean disease activity, as assessed by Disease Activity Score 28 (DAS28), was 4.45. Basal cortisol and the percentage of cortisol reduction after the very low dose intravenous dexamethasone suppression test, as well as NF-κB, IKK, c-Fos, and *GRα* mRNA expression, were similar among groups. We did not observe significant correlations between glucocorticoid *in vivo* sensitivity and DAS28. There was a positive correlation between

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DAS28 and NF-κB, IKK, and *GRα*, but not c-Fos. In the multivariate analysis, only NF-κB mRNA remained as an independent variable for predicting DAS28.

Key words: Adrenal cortex hormones; Corticosteroids; Dexamethasone; Glucocorticoid sensitivity inflammation; Nuclear factor kappa-B; Rheumatoid arthritis

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