DETECTION OF NITRIC OXIDE LEVEL IN SERUM AND SYNOVIAL FLUID OF PATIENTS WITH RHEUMATOID ARTHRITITS AND OSTEOARTHRITIS, AND ITS RELATION TO DISEASE ACTIVITY

Thesis
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ABSTRACT

OBJECTIVES:

To detect the level of nitric oxide in the serum and synovial fluid of patients with rheumatoid arthritis and osteoarthritis and detect its correlation to disease activity parameters in rheumatoid arthritis patients.

METHODS:

15 patients with RA were studied as regards their serum and synovial fluid level of nitric oxide, which being an unstable gas, it rapidly degrades to nitrites and nitrates and these were estimated according to the method of ***Granger et al. (1990)*** and ***Benjamin and Vallence (1994)***. Synovial fluid samples were also treated the same way after centrifugion to get cell free synovial fluid.

Also, 15 patients with OA were studied to detect their serum and synovial fluid level of nitric oxide.

Ten normal controls, of matching age and sex, were studied as regards their serum samples.

RESULTS:

Group A: (RA patients).

The nitric oxide concentration in synovial fluid was higher than that of serum samples. Also, the serum samples of RA patients have a higher concentrations of NO than that of controls.

On correlating the level of serum and synovial nitric oxide concentration and rheumatoid arthritis activity measures, there was a positive correlation.

Group B: (OA patients).

15 OA patients, the synovial fluid samples content of nitric oxide was higher than the serum samples. And, again the serum nitric oxide concentrations in OA patients was higher than in controls.

On correlating the level of serum and synovial NO in both groups, there was significant positive correlation ($P<0.05$).

CONCLUSION:

The results of this study go with the hypothesis that nitric oxide is synthesized by the diseased synovium and that it may play a role as an inflammatory mediator in rheumatic diseases.

Key words: Rheumatoid arthritis (RA), Osteoarthritis (OA), Serum Nitric Oxide Level, Synovial nitric oxide level – Disease activity.