

# **Relationship Between serum Level of Homocysteine, Leptin and Neopterin and Disease Activity in Rheumatoid Arthritis patients with or without Extra-articular Manifestations**

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## **ABSTRACT**

**Objectives:** this study was aimed to determine serum homocysteine, leptin and neopterin levels in patients with RA and investigate the relationship between clinical and laboratory parameters of disease activity and presence or absence of extra- articular manifestations.

**Patients and methods:** This study included 80 RA patients (16 males, 64 females; mean age 34.5±10.8 years; range 24.5 to 45.3 years) and age and sex-matched 80 healthy controls (16 males, 64 females, mean age 30.8 ± 10.4 range 20 to 65). RA patients were divided into two groups (A&B) depending on presence or absence of Extra-articular manifestations. Of the patients, there was 40 patients with no Extra-articular while the other 40 with Extra-articular (9 patients with Cutaneous vasculitis, 7 with Nodules, 6 with Neuropathy, 5 with Reynaud's phenomenon ,7 with 2ry.sjogren, 2 with Fealty's syndrome, 2 with Interstitial nephritis, 2 with Interstitial lung disease).

**Results:** In the RA group (A+B), mean serum Hcy, leptin and neopterin levels were (11.79 + 8.72 µmol/L), (22.43 ± 7.37 ng/ml) & (3.83±1.84 nmol/L) respectively with No statistically significant difference was found between RA and control groups regarding serum Leptin (p=0.674). While a significant difference was found between RA and control groups regarding serum Neopetrin (< 0.001) &Hcy. (< 0.001). Also, In RA groups (A, B) there was statistically significant difference regarding serum Neopterin (p< 0.03) and DAS 28 ESR (p< 0.05). there was a Positive significant correlation between serum (neopterin - Hcy) and ESR,

TNF- $\alpha$ , IL-6, and DAS-28 ( $p < 0.05$ ) while no significant correlation was found between serum (neopterin- Hcy) and CRP ( $p > 0.05$ ).

**Conclusion:** Serum leptin cannot be considered of value as an inflammation marker in monitoring RA patients while Serum neopterin can be used as a sensitive marker for assaying background inflammation and disease activity score in RA patients while serum homocysteine can be used as a marker for probability of extra articular complication of RA.

**Keywords:** Homocysteine; Leptin; Neopterin; Rheumatoid arthritis.