

To Study the Correlation between Abnormalities in Lipid Profile and Severity and Disease Activity in Rheumatoid Arthritis

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Background

Rheumatoid Arthritis (RA) is a chronic systemic inflammatory disease that primarily affects peripheral synovial joints and is characterized by joint swelling, joint tenderness and leads to destruction of the affected joints. However, persistent uncontrolled inflammation among poorly managed patients may cause several complications in RA known as extra-articular manifestations. RA is a common disease which affects all populations of the world though the prevalence varies in different populations. In a recent study the incidence of RA was found to be 1 %. Recent studies have shown that the cardiovascular disease plays an important role in increased mortality associated with RA. The excess cardiovascular disease encountered is believed to be due to the contribution of traditional risk factors (e.g. dyslipidemia, smoking, obesity, hypertension) as well as due to novel risk factors (e.g. systemic inflammation). In various studies it has been documented that lipid profile in RA is adversely affected. In general most studies have demonstrated a decrease in HDL - Cholesterol (HDL-C), while the effect on LDL-Cholesterol (LDL-C) has been found to be variable. The present study is being conducted as there is paucity of data on prevalence of lipid abnormalities in patients of rheumatoid arthritis in Indian literature. Lack of extensive research in this field necessitates further studies to establish a definitive conclusion in the Indian population.

Aims & Objectives

To study the correlation between abnormalities in lipid profile and severity and disease activity in Rheumatoid Arthritis.

Materials & Methods

Thirty patients of Rheumatoid Arthritis satisfying The 2010 American College of Rheumatology -European League Against Rheumatism (ACR/EULAR) classification criteria were enrolled in the study. The study included all patients of Rheumatoid Arthritis irrespective of their treatment or remission status. The patients were

subjected to detailed clinical history and examination with special emphasis on evaluation for swollen joint count and tender joint count. All patients underwent the following investigation: Hemoglobin, TLC, DLC, ESR, Platelet count, Blood glucose fasting, C-Reactive Protein (CRP), Rheumatoid factor (RF), Lipid profile. Disease Activity Score - DAS 28 was calculated for each patient. Correlation between variables i.e. lipid profile indices and DAS 28 score, CRP and ESR was examined using the Pearson's correlation coefficient (r) and ANCOVA test. To find out the significance of Pearson's coefficient value, student-t test was used, and a p value of less than 0.05 was considered statistically significant.

Results

The mean age of patients was 44.6 ± 12.6 years. Out of 30 patients, 23 (76.66%) were females and 7 (23.33%) were males. Number of swollen and tender joints in individual patients varied from 0 to 16 and 0 to 23 respectively, out of maximum possible score of 28. Value of DAS 28 score varied in patients from 1.97 to 7.38 with mean of 4.72 ± 1.40 . Value of atherogenic index varied from 2.4 to 14.4 with mean of 4.61 ± 2.21 which was on a higher side. DAS score was statistically significantly correlated with serum HDL cholesterol. While other lipid profile indices such as serum LDL cholesterol, serum triglyceride, serum VLDL cholesterol and atherogenic index did not have significant relationship with DAS score. Pearson's correlation coefficient value ranged from -0.19 (serum total cholesterol) to 0.26 (serum VLDL and triglyceride) for different lipid indices but none of the values was statistically significant. CRP values in our study did not correlate significantly with any of the lipid indices.

Conclusions

Rheumatoid arthritis is dyslipidemic state. There is significant inverse correlation between serum HDL cholesterol level and disease activity. There is no significant relationship between disease activity and levels of serum cholesterol, serum LDL cholesterol, serum VLDL cholesterol, serum triglyceride level and atherogenic index.