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Can Abnormal Lipids be considered as the Risk Factors for Systemic Lupus Erythematosus?

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Aim

The systemic lupus erythematosus (SLE) is a chronic autoimmune disease that affects multiple organs at different times and causes extensive damage to the connective tissue, blood vessels, and serous membranes. This inflammatory disease may affect the skin, joints, blood, kidneys and the central nervous system or any part of the body. This disease has a wide geographical distribution in different parts of the world, and there are many differences between different ethnic and geographical groups .Diagnosis of SLE is based on clinical and autoantibody manifestations using the American College of Rheumatology (ACR) criteria. The most common symptom in lupus patients is skeletal joint symptoms. Then, the disease also affects the skin, blood, kidney, nervous, psychiatric, pulmonary and cardiac systems according to severity. The involvement of vital organs is one of the characteristics of the disease, due to which the biochemical balance of the blood disrupts .The prevalence of this disease is increasing and can be life-threatening. To this end, early diagnosis and treatment are important. Patients suffer from long-term complications of the disease, as well as direct and indirect costs resulting from it, which can have a negative impact on the quality of life and daily activities .

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease that involves vital organs of the body. Studies showed that abnormal lipids maybe involved in the pathogenesis of SLE. Hence, the aim of this study was to evaluate lipid profile in lupus patients.

Methods

This descriptive study was performed on 136 SLE patients referred to the Rheumatology Specialist Clinic of Rafsanjan University of Medical Sciences, Rafsanjan Iran, from the beginning of October 2015 to August 2018. Data were collected using a checklist including demographic characteristics including gender, age, marital status, occupation, educational level, place of residence (urban and rural), smoking, and family history of rheumatic disease.

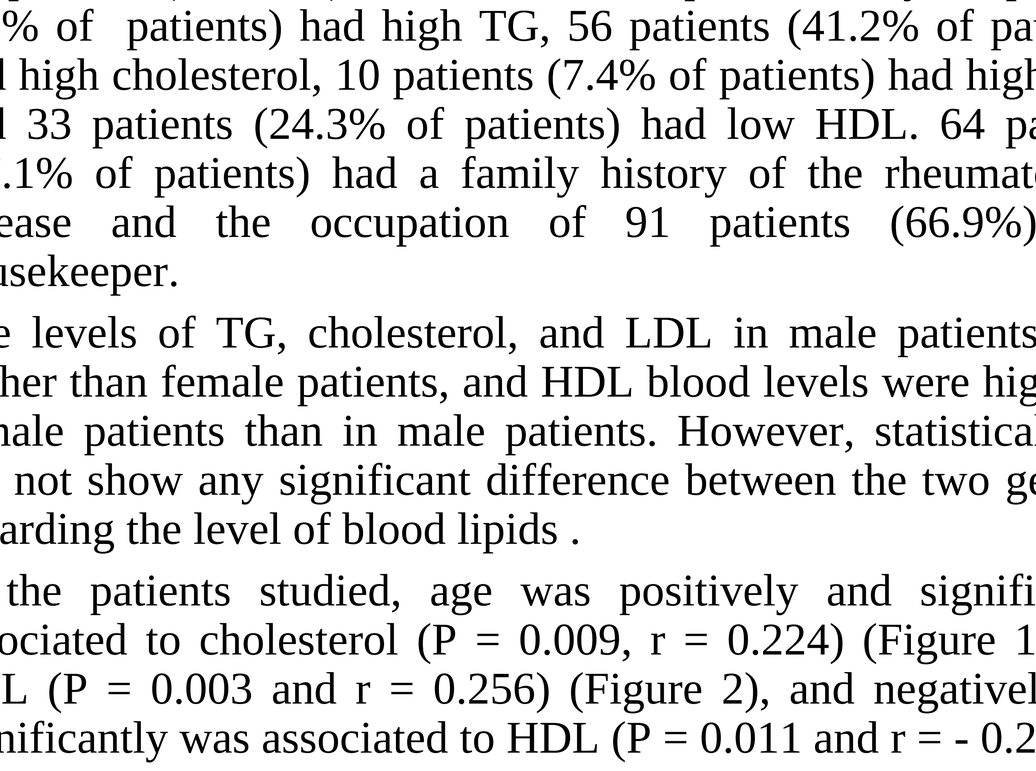
Blood Collection and analysis Peripheral blood sample was obtained from the studied patients after overnight fasting. Serum levels of cholesterol, triglyceride, HDL, and LDL were measured by standard kits and using an autoanalyzer .SPSS18 software was used to analyze the data. Also, the analysis of the differences between quantitative variables between several groups was done using ANOVA test (or Kruskal–Wallis test). The significance level in all analyses was considered to be less than 0.05.

Conclusion

Based on the results of this study in newly diagnosed lupus patients, the SLE activity index was positively and significantly related to cholesterol and LDL and was negatively and significantly related to HDL, however, no significant correlation was found between blood triglyceride levels and SLE activity index. Therefore, these patients should be screened for profile lipid disorders at the time of diagnosis as well as the course of treatment. It is recommended that studies with a higher sample size and control group were carried out, and the relationship between the severity of lupus disease and the level of lipid metabolism biomarkers and also inflammatory markers should be investigated

Results

- The mean of SLEDAI index in the patients was 13.8 ± 5.9 (Table 1). 87.5% of the patients (119 cases) were female and 12.5% of the patients (17 cases) were male. In the present study, 49 patients (36% of patients) had high TG, 56 patients (41.2% of patients) had high cholesterol, 10 patients (7.4% of patients) had high LDL and 33 patients (24.3% of patients) had low HDL. 64 patients (47.1% of patients) had a family history of the rheumatologic disease and the occupation of 91 patients (66.9%) was housekeeper.
- The levels of TG, cholesterol, and LDL in male patients were higher than female patients, and HDL blood levels were higher in female patients than in male patients. However, statistical tests did not show any significant difference between the two genders regarding the level of blood lipids .
- In the patients studied, age was positively and significantly associated to cholesterol (P = 0.009, r = 0.224) (Figure 1), and LDL (P = 0.003 and r = 0.256) (Figure 2), and negatively and significantly was associated to HDL (P = 0.011 and r = - 0.218).
- There is no significant correlation between blood triglyceride levels and age. Blood lipid levels have not significantly different in patients with different levels of education (illiterate, school education, and university education). Blood lipid levels in urban and rural patients were not significantly different. Blood lipid levels in smokers and non-smokers were not significantly different.



Association between LDL level and SLEDAI in new diagnosed patients