ABSTRACT

Women with polycystic ovarian syndrome are at increased risk for cardiovascular disorders. The investigations were carried out in women with polycystic ovarian syndrome of age group ranging from 21 to 37 years. The PCOS in the test group were confirmed with ultrasonographic studies. A similar age group of women without PCOS served as control. Patients attending the outpatients unit of the department of Gynecology and Obstetrics at Sri Ramachandra Medical College and Research institute, Porur, Chennai were included in the study. Blood samples were obtained from the test and control group after getting proper consent from them. General anthropometric data were collected. The androgenic status in PCOS and control women were studied. The lipid profile such as Cholesterol, Triglyceride and Lipoproteins were estimated. The antioxidant status in them like Copper, Selenium, Catalase, Superoxide dismutase and Lipid peroxidase were studied. The levels of paraoxonase enzyme which regulates the lipoprotein profile in both test and control groups were studied. In order to screen the genetic variations in paraoxonase gene, the genomic DNA was isolated. Genetic polymorphisms, two in PON1 coding region and one in the promoter region were studied. The results were statistically analysed.

The present study indicated a significant alteration in the anthropometric data like BMI, waist to hip ratio in PCOS women when compared to control. The androgenic status in the test group also significantly increased when compared to the control. The lipid profile in PCOS women significantly increased when compared to the control. Although some of the antioxidants showed no significant alterations, selenium and some of the antioxidant enzymes significantly altered indicating an oxidative stress. The investigations were carried out on paraoxonase enzyme in test and control group. A significant decrease in the level of the enzyme was observed in PCOS women when compared to control. Three polymorphism were studied upon screening the paraoxonase gene. Two existed in the coding region and one in the promoter region. The L55M (Leucine to Methionine) conversion existed at 55th position,
a Q192 R polymorphism (glutamine to arginine) existed at 192\textsuperscript{nd} position and a -108C/T polymorphism (Cytosine to thymidine) conversion was observed in the PCOS subjects. Among the three polymorphisms, -108 C/T is very significant in PCOS condition which clearly indicates a genetic variation in them.