

Frequency of Dyslipidemia In Patients of Polycystic Ovarian Syndrome (PCOS) In BV Hospital, Bahawalpur

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ABSTRACT

Aim: To determine the frequency of dyslipidemia in patients of PCOS in BVH Bahawalpur.

Methods: This cross sectional study consisted of 286 patients and conducted at department of Gynae BVH, Bahawalpur from January 2012 to December 2012. All diagnosed patients of PCOS of age group from 18 to 35 years with BMI <25 were included in this study.

Results: Out of 286 patients of polycystic ovarian syndrome (PCOS), dyslipidemia was found in 69 (24.1%) patients. In age group 18-27 years, dyslipidemia was found in 4(1.4%) patients and in age group 28-35 years dyslipidemia was found in 65(22.7%) patients.

Conclusion: Dyslipidemia occurs in PCOS patients and more frequently in high normal BMI patients than low normal BMI patients. Moreover it occurs more in age > 28 yrs as compare to younger ones.

Keywords: Polycystic ovary syndrome, lipid profile, BMI, dyslipidemia.

INTRODUCTION

Polycystic ovary syndrome is a multifactorial and polygenic condition¹. It is a syndrome of ovarian dysfunction that is characterized by anovulation, hyperandrogenism and/or the presence of polycystic ovary (PCO) morphology. The polycystic ovary syndrome (PCOS) is one of the most common female endocrinopathies affecting 6-10% of women in reproductive age.² PCOS is associated with long-term health risks including type II diabetes mellitus and coronary artery disease.³ Insulin resistance, hyperandrogenism and dyslipidemia are likely to be the major risk factors for CVD in women with PCOS^{4,5}. Insulin resistance and dyslipidemia seem to have an important role on the risk of cardiovascular pathology in women with PCOS. It is still not known to what degree dyslipidemia contributes to this risk⁶.

Generally, dyslipidemia of PCOS is characterized by increased triglycerides and low HDL-cholesterol, but some studies found although low HDL-c is common, hypertriglyceridemia to be relatively uncommon.⁵ To the contrary, the most classic lipid alteration determining CV risk, increase of LDL-c, is not common in all populations with PCOS. Beyond total LDL-c concentrations, quality of LDL may exert a direct influence on the CV risk⁷.

METHODOLOGY

This cross sectional study included 286 patients and conducted at department of Gynae BVH, Bahawalpur

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from January 2012 to December 2012. All diagnosed patients of PCOS of age group from 18 to 35 years with BMI <25 were included in this study. Patients with dyslipidemia, diabetes mellitus, ischemic heart disease, taking lipid lowering drug were excluded from the study. Fasting blood sample was taken and sent to laboratory for total cholesterol, LDL, HDL & Triglycerides. Total cholesterol > 200mg/dl, TG >150 mg/dl, LDL-c >130 mg/dl and HDL-c < 40 mg/dl were taken as normal values and abnormal values of anyone of above parameters were considered as dyslipidemia. All the data was entered in SPSS version 17 and analyzed. Mean was calculated for numerical data and frequencies were calculated for categorical data.

RESULTS

Detail of results is given in tables 1 and 2

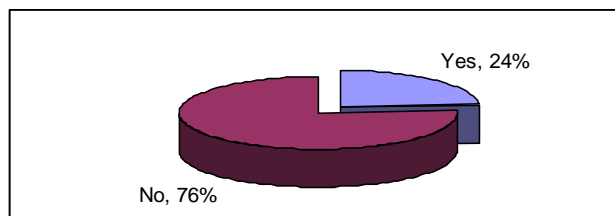
Table 1: Age distribution

Age group	Dyslipidemia		
	Yes	No	Total
18-27	4(1.4%)	206(72.03%)	210(73.4%)
28-35	65(22.7%)	11(3.8%)	76(26.6%)
Total	69(24.1%)	217(75.9%)	286(100%)

Table 2: BMI distribution

BMI Group	Dyslipidemia		
	Yes	No	Total
18-20	2(0.7%)	138(48.3%)	140(49%)
21-23	67(23.4%)	79(27.6%)	146(51%)
Total	69(24.1%)	217(75.9%)	286(100%)

Dyslipidemia



DISCUSSION

Polycystic ovary syndrome is the most common endocrine disorder to affect women. It is a genetically complex disorder that is characterized by hyperandrogenemia and amenorrhoea or oligomenorrhoea resulting in infertility among reproductive age women⁸. Cardinal features of PCOS include chronic anovulation, clinical or biochemical hyperandrogenism, obesity and polycystic ovaries. Oligomenorrhoea or amenorrhoea is associated with hyperandrogenism and clinical manifestations of hirsutism or acne may be present. Although a number of underlying pathophysiological mechanisms have been proposed for the development of PCOS, insulin resistance is now accepted to be associated with the syndrome. IR in PCOS puts women at a higher risk for developing type-II diabetes mellitus and cardiovascular diseases⁹. The etiology of PCOS remains unclear and abnormal ovarian steroidogenesis, hyperinsulinemia and neuroendocrine abnormalities have been proposed as a primary underlying abnormality¹⁰. PCOS also has a strong genetic component but further studies in this field has to be done for the identification of genetic determinants of PCOS due to the convergence of several critical factors. Metabolic syndrome is characterized by central obesity, elevated levels of TG, LDL and VLDL cholesterol and insulin resistance. A study done by Moini et al¹¹ showed the frequency of MBS in reproductive age women with PCOS to be 22.7% which was similar to the prevalence of MBS in other ethnicities and races diagnosed with PCOS. Thus women with PCOS have a high prevalence of MBS and its individual components, particularly decreased HDL levels. Therefore, the management of these women as a high risk population for MBS is recommended.

In this study, dyslipidemia was found in 69 (24.1%) patients. Kim JJ et al¹² reported that prevalence of dyslipidemia was 35.7% in 865 consecutive patients. These findings are in favour of my study. In one study by Chae et al¹³, reported the clinical and biochemical characteristics of PCOS in Korean women. In 166 women with PCOS and 277 controls, prevalence of elevated TG ($\geq 150\text{mg/dL}$) was 26.7%, whereas that of controls was 1% ($P < 0.01$); prevalence of low HDL-C ($< 50\text{mg/dL}$) was

30.0%, whereas that of controls was 3% ($P = 0.04$). In one study by Hong Y et al¹⁴ the prevalence of dyslipidemia was 24.7% in PCOS patients and the prevalence of dyslipidemia was significantly higher in the IR group than in the NIR group (39.9% vs 15.3%). In one study by Rocha et al¹⁵ the incidence of dyslipidemia in the PCOS group was twice that of the control group (76.1% vs 32.2%). The most frequent abnormalities were low HDL-c (57.6%) and high triglyceride (28.3%). HDL-c was significantly lower in all subgroups of women with PCOS when compared to the subgroups of normal women.

CONCLUSION

Dyslipidemia occurs in PCOS patients. It occurs more frequently in high normal BMI patients than low normal BMI patients. Moreover it occurs more in age > 28 years as compare to younger ones.

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