

**Correlation Of Metabolic Syndrome In Different
Phenotypes Of Polycystic Ovary Syndrome And Pregnancy
Rate**

Thesis

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By

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Summary

Polycystic ovary syndrome (PCOS) is considered one of the most common endocrine and metabolic disorders in women of reproductive age, Insulin resistance (IR) plays an important role in pathophysiology in PCOS, Hyperandrogenism is one of the most distressing endocrine disorders in women of PCOS, metabolic syndrome includes group of metabolic disorders such as impaired glucose tolerance, dyslipidemia, and hypertension that are present in the majority of the women with PCOS. PCOS is also a known cause for infertility as a consequence of chronic anovulation, although the exact mechanism is still a matter of debate, hyperandrogenism, obesity and hyperandrogenism are suggested to have a major role

our study has been conducted primarily by diagnosis of PCOS in 100 patients according to the Rotterdam criteria, these patients (aged between 18 y– 30 y) complaining of irregular menstruation, signs of hyperandrogenism, and infertility, we have informed the participants about the objectives of the study, the examination, investigations that will be done, some patients have been lost because they haven't perform all the laboratory tests and /or a pelvic ultrasound scan, consents have been taken and patients classified into different four phenotypes (A, C, C and D).

After full clinical history, Physical examinations by measuring arterial blood pressure (ABP), The height, weight, body mass index (BMI), abdominal circumference (AC) and assessment of clinical signs of hyperandrogenism, Laboratory investigations were done to analyze the serum hormone level for prolactin, follicle stimulating hormone (FSH), luteinizing hormone (LH), thyroid stimulating hormone (TSH), free thyroxine (T4), and β -hCG, lipid profile (triglycerides (TG), high density lipoprotein (HDL), and fasting blood sugar (FBS) to evaluate levels of glycemic state.

The prevalence of the different PCOS phenotypes varies according to many factors as body weight of the population and the ethnic group, our study found that the classic PCOS phenotype (A and B) is the most common that represents about 60% of patients, while the ovulatory (phenotype C) and the normo-androgenic phenotype (D) represent 27% and 13% of the patients respectively, it also reveals statistically significant difference between four groups of PCOS as regarding presence of metabolic Syndrome ($p < 0.05$), with the highest prevalence in phenotype A and the least prevalence in phenotype D, this finding is correlated with the reported higher prevalence of hyperandrogenism and menstrual irregularities in the classic PCOS phenotype (phenotype A and B)

The relation between PCOS and obesity is complex, as regarding abdominal circumference (AC) Our study reveals statistically significant difference between PCOS Phenotypes ($p < 0.05$) with the highest prevalence of increase the abdominal circumference is observed in group A (mean 94.64 ± 2.75), as regarding dyslipidemia, our study reveals highly statistically significant difference between PCOS phenotypes in serum level of (HDL) ($p < 0.05$), and (TG) ($p < 0.05$) with the highest prevalence in both phenotype A and B (mean 58.24 ± 1.54 and 51.44 ± 1.57 respectively), These findings can explain to us the pathological role of visceral obesity in the developing of metabolic changes that observed to be also higher in classic types of PCOS (group A and B) as mentioned before.

hyperinsulinemia and hyperandrogenemia can affect fertility in patients with PCOS lead to chronic anovulation, Our study reveals that pregnancy rate in different PCOS Phenotypes has no statistically significant difference ($p > 0.05$), it is suggested that patients with PCOS may move from a severe (classic) to a mild (ovulatory or normoandrogenic) phenotype due to frequent changes in lifestyle and androgen production during reproductive age that may influence the metabolic prognosis and the fertility of PCOS.