**Original Paper**

# Evaluation of accuracy of diagnosis of lipid accumulate product index, insulin resistance, waist circumference and waist to hip ratio in women with polycystic ovary syndrome

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## Abstract

**Background and Objective:** Polycystic Ovarian Syndrome (PCOS) is considered as a metabolic disorder and it is one of the most common endocrine and heterogeneous disorders with complex pathogenesis among women in reproductive ages. This study was done to evaluate the accuracy of diagnosis of lipid accumulate product index (LAP), insulin resistance, waist circumference and waist to hip ratio in women with polycystic ovary syndrome.

**Methods:** In this case control study, antropometrics, biochemical parameters, LAP and insulin resistance in 43 women suffering from PCOS as case and 40 healthy women as control were measured. Body mass index (BMI), waist hip ratio (WHR) and waist circumference (WC) was determined for each subject. LAP was defined as [WC (cm)-58×TG (m mol/L)]. PCOS was diagnosed according to Roterdam standard .Insulin resistance was defined based on Homeostatic model assessment – insulin resistance (HOMA-IR).

**Results:** The mean age, BMI, WHR and LAP index, among PCOS women were 24.06±5.86, 26.61±4.34, 0.81±0.061 and 47.13±4.13, respectively. There was a direct and significant correlation between HOMA-IR index and BMI, WC and LAP in case group ($P<0.05$). Statistical analysis showed that the optimal cut-off value of LAP, BMI, WC and WHR were 46.93, 27.91, 93 and 0.81 respectively.

**Conclusion:** The WC, BMI and LAP indices are useful in screening the insulin resistance in patients with PCOS.

**Keywords:** Polycystic ovary syndrome, Insulin resistance index, lipid accumulate product index, Waist to hip ratio, Body mass index, Waist circumference

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