

# INCREASED CAROTID INTIMA-MEDIA THICKNESS IS A CARDIOVASCULAR RISK MARKER IN POLYCYSTIC OVARY SYNDROME

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**Background:** Carotid intima-media thickness (CIMT) is an important cardiovascular (CV) risk marker that is not adequately evaluated in patients with polycystic ovary syndrome (PCOS). The aim of the study was to observe the association of CIMT with PCOS and its manifestations. **Methods:** This cross-sectional study was done in the Department of Endocrinology, BSMMU which enrolled 40 newly diagnosed PCOS patients (18- 35 years) and an equal number of control. After collecting clinical data, fasting blood was drawn to measure glucose, lipid profiles, and hormones including insulin, and total testosterone using glucose oxidase, peroxidase, and chemiluminescent immunoassay respectively. Ultrasonography of pelvic organs was done in the early follicular phase. A B-mode ultrasound image of the common carotid artery using a 08 to 12 MHz high-resolution linear ultrasound probe was done by a single sonologist. **Results:** CIMT was significantly higher in PCOS than in control [0.63 (0.60, 0.65) vs. 0.45 (0.41, 0.50), mm, median (IQR), <0.001]. PCOS participants had significantly higher mean CIMT compared to controls (p<0.001 for all) when they were categorized based on body mass index (BMI  $\geq 25$  kg/m<sup>2</sup>), waist circumference (WC  $\geq 80$  cm) and insulin resistance (IR by HOMA-IR  $\geq 2.6$ ). Considering CIMT  $\geq 75^{\text{th}}$  percentile of control, all patients with PCOS had a high CIMT. CIMT correlated with WC (r=0.337, p=0.039) and triglyceride (TG) (r=0.315, p=0.048) in PCOS. **Conclusion:** Patients with PCOS had higher CIMT and has an association with BMI, WC, IR, and TG indicating at higher CV risks.

**Keywords:** Carotid intima-media thickness, polycystic ovary syndrome

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