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**Early Atherosclerosis In High-risk Women With PCOS**
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**Background:** Polycystic Ovary Syndrome (PCOS) is associated with increased cardiometabolic risk factors and cardiovascular disease (CVD). Early CVD screening may be an important tool in young high-risk women to effectively prevent premature morbidity from CVD. **Objective:** The aim of this study was to provide evidence-based research in the screening and assessment of early atherogenic dyslipidemia, cardiac dysfunction and subclinical atherosclerotic CVD.
(ACVD) in high-risk women with and without PCOS. Design, Setting, participants: A case-control study in high-risk women aged 25-45 years with (n=45) and without PCOS (n=25), matched for age and body mass index. Main outcome measures: Atherogenic dyslipidemia including a standard lipid panel, total apoB and remnant cholesterol were measured. ACVD was measured using carotid intima-media thickness (cIMT) and presence of carotid plaque, and cardiac function using ultrasound and 2D/3D echocardiography. **Results:** Fasting plasma triglycerides (1.9 ± 0.2 vs 1.2 ± 0.2 mM) and remnant cholesterol (0.85 ± 0.1 vs 0.6 ± 0.1 mM) were significantly elevated by 30% and total apoB tended to be elevated by 20% (1.0 ± 0.1 vs 0.8 ± 0.1 g/L) in PCOS compared to controls. Those with PCOS had a 5-fold higher incidence of carotid plaque compared to controls but no difference in cIMT or cardiac function indices were observed. **Conclusion:** Our data shows detection of early ACVD in PCOS compared to controls, and this is associated with atherogenic dyslipidemia. These results suggest early screening and a risk-stratification model may be warranted in high-risk young women with and without PCOS.

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