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Performance of surrogate markers for insulin resistance in women with PCOS

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Context: Indian women are reported to have a high prevalence of PCOS and diabetes,with higher fasting insulin levels compared with caucasian women.
Objective: To identify a reliable, simple, reproducible, economically viable surrogate marker and compare the performance of these for insulin resistance IR in Indian woman with PCOS
Methods: It is a prospective cross sectional study using simple random technique of 325 women attending an urban, specialty hospital. Approved by Ethics Committee,TRF .Informed consent obtained.Statistical analysis done using Scientific Package for Social Sciences version 18.1
Patients: Inclusion criteria :Women diagnosed with PCOS based on Rotterdam criteria, 16-35 yrs old. Exclusion criteria : Girls three years pre menarche , >35 years of age, known medical conditions such as diabetes, hypothyroidism, liver, kidney, or heart failure, neoplasia or on steroid hormones,on drugs known to have effects on lipid metabolism during the past 2 years,oral contraceptive pill for the past three months.
Intervention: Blood pressure and BMI were measured. Overweight (BMI >23 kg/m2) and central obesity (waist circumference >80 cm) were defined by Asian criteria . In all women with PCOS and in normal controls, a blood sample was obtained after 10 hrs of fasting for measurements of insulin, glucose and a lipid profile .Ten normal women were selected on the basis of having normal body weight, an absence of hirsutism or signs of androgenization, and normal ovulatory menstrual cycles, with no history of medical problems and not on any medication. All biochemical analytes were measured using an autoanalyzer (Bayer RA-XT, Tarrytown, NY). Hormones were measured by RIA (serum T and insulin; Diagnostic Products Corporation, Los Angeles, CA
Main outcome measures: Triglyceride Index, Triglyceride/High density lipoprotein ratio (TG/HDL) were comparable to HOMA IR as a sensitive tool. TG/HDL ratio and Fasting Glucose/Fasting Insulin were more specific than Triglyceride Index.
Results: The lipid profile mathematical markers compared well with insulin glucose based markers for diagnosing IR.
Conclusions: TG/HDL,TyG index could be an accessible and reliable test for estimating insulin resistance in low-income individuals in high-risk groups like PCOS in India. Lipid profile is a simple standardized ,reproducible test.This can be a good counseling tool to initiate THERAPEUTIC LIFESTYLE MANAGEMENT at an early stage to prevent metabolic disease .

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