Introduction: Polycystic ovarian syndrome (PCOS) affects 5 to 10% of women of reproductive age resulting in menstrual abnormalities, hyperandrogenism, infertility, metabolic disturbances and cardiovascular risk. We aimed to examine the subclinical metabolic and cardiovascular features in young women with PCOS.

Methods: 118 young women were recruited, with 15 self-reporting a diagnosis of PCOS. Body composition was evaluated by DEXA scan and physical fitness by VO2 max testing. Women were assessed for blood pressure, response to volume challenge, aortic-femoral pulse wave velocity, flow mediated vasodilation, adrenergic response to Valsalva, as well as uterine, renal and cardiac hemodynamics. Complete blood counts, metabolic and lipid profiles were assessed. Homeostatic Model Assessment of Insulin Resistance (HOMA-IR) was calculated as an index of insulin resistance. All studies were conducted during the follicular phase of the menstrual cycle, or following a withdrawal bleed (mean 9.4±3.5 days).

Results: There was no difference in age between groups. We identified differences in BMI, total fat and fat distribution, all showing statistically significant increases in PCOS. Renal and cardiac volumetrics, as well as laboratory markers also differed in PCOS (Tables 1). We saw no differences between healthy and PCOS subjects in adrenergic response, plasma volume, blood pressure, vessel compliance in response to volume challenge, uterine blood flow, pulse wave velocity and lipid profile. Angiotensin II, urine sodium and creatinine statistically differed between the two groups. Fasting glucose, insulin and HOMA-IR tended higher in PCOS, although not all significantly.

Conclusions: Although our sample size is small, our results suggest that physiology of women with PCOS differs from that of healthy women. These differences may help explain clinical trajectories, both pregnancy related, as well as long term health risks associated with PCOS.

Table 1: Demographics of renal and cardiac volumetric, and laboratory markers

Biography
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