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Impaired uterine perfusion associated with metabolic disorders in women with polycystic ovary syndrome.

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BACKGROUND: Risk factors for cardiovascular disease, including chronic anovulation, obesity, hyperandrogenism, hyperinsulinemia, and dyslipidemia, are commonly observed in women with polycystic ovary syndrome (PCOS). We evaluated uterine perfusion and its correlation with clinical and biochemical parameters in women with PCOS. **METHODS:** We performed a pulsed Doppler study on uterine arterial blood flow in 25 women with PCOS and 45 control women with regular menstrual cycles. PCOS was diagnosed based on oligomenorrhea, polycystic ovaries determined by means of ultrasonography, and elevated luteinizing hormone (LH)/follicle-stimulating hormone (FSH) ratio. **RESULTS:** Women with PCOS had a significantly higher body mass index (BMI) and serum testosterone, and showed insulin resistance and dyslipidemia, including increased total cholesterol, triglyceride, low-density lipoprotein-cholesterol (LDL-C), and decreased high-density lipoprotein-cholesterol (HDL-C). The uterine arterial pulsatility index (PI) in women with PCOS was significantly higher than that in the control women during the follicular phase. The PI was correlated with BMI, LH/FSH ratio, or LDL-C/HDL-C ratio, whereas it was inversely correlated with the HDL-C level. Women with PCOS had reduced endometrial thickness and elevated uterine arterial PI in the luteal phase, in which implantation occurs. **CONCLUSIONS:** Elevation of uterine arterial blood flow resistance is associated with risk factors for cardiovascular events. Furthermore, the impaired uterine perfusion in the luteal phase may cause endometrial dysfunction in women with PCOS.

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