The endocrine abnormalities in adolescents with polycystic ovary syndrome in China

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Context: Polycystic ovary syndrome (PCOS) is a common gynecological endocrine disorders, whose etiological and clinical performance with a high degree of heterogeneity.

Objective: To investigate the endocrinial abnormalities of adolescent PCOS with or without insulin resistance (IR).

Methods: The serum endocrine levels were measured and their relationships with homeostasis model of assessment for insulin resistance (HOMA-IR ) were analyzed.

Patients: Eighty-eight adolescent patients with PCOS (PCOS group), including 40 cases with IR and 48 cases without IR, and 87 healthy women (control group) were enrolled in the study.

Interventions: None.

Main outcome measure:PCOS group had a higher levels of luteinizing hormone (LH), LH/follicle stimulating hormone ratio, dehydroepiandrosterone sulfate(DHEAS), total testosterone(TT) and free androgen index (FAI), but a lower level of the sex hormone binding globulin (SHBG). There was a significant difference in serum fasting insulin and HOMA-IR levels, but no difference in serum fasting blood-glucose (FBG) between adolescent PCOS and control groups. PCOS group had a higher level of leptin.

The DHEAS and FAI levels in IR group of PCOS patients were higher, while SHBG and LH levels were lower than those in non-IR group. The leptin level was significantly higher and adiponectin level was lower in IR group than those in non-IR group. The adiponectin level was negatively correlated with BMI; while the leptin level was positively correlated.

Conclusions: The PCOS patients have decreased insulin sensitivity with various degrees and increased incidence of IR. IR is reciprocally correlated with hyperandrogenism and obesity, forming a vicious cycle of endocrinal metabolism and a higher risk of long-term complications. The adiponectin and leptin might be a predictive index for insulin resistance, which need to be confirmed by further study.

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