Correlation between 4G and 5G genotypes distribution of plasminogen activator inhibitor-1 gene polymorphism in its promoter region with polycystic ovarian syndrome

Objective To investigate the correlation of 4G and 5G genotypes distribution of plasminogen activator-1 (PAI-1) gene polymorphism region with Polycystic ovary syndrome (PCOS) and their relationships between pathogenesis, insulin resistance (IR) and obese. Methods 120 patients and 120 controls were selected. Body mass index (BMI) and insulin resistance index (Homa-IR) were determined. Based on the BMI and Homa-IR, the PCOS patients were divided into two groups separately, obese/non-obese and IR/non-IR. Results: The distributions of PAI-1 gene polymorphisms 4G genotype and 5G genotype were different between the PCOS and the controls. The rate of 4G type was significantly higher in the PCOS than it in the control (P<0.05); The distributions of PAI-1 gene polymorphisms 4G genotype and 5G genotype were different between the IR and the non-IR, 4G genotype is higher and 5G genotype is lower in the IR. (P<0.05); The distributions of PAI-1 gene polymorphisms 4G genotype and 5G genotype were different between the obese and the non-obese, 4G genotype is higher and 5G genotype is lower in the non-obese. Conclusion: High expression of 4G/4G genetype in PAI-1 gene 4G/5G polymorphism may paly an important genetic role in the pathogenesis of PCOS. It may also be correlated with IR and the development of PCOS especially in non-obese patients.