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Association of genetic polymorphisms of GSTM1 and e-NOS genes with endometriosis among females from Egyptian population

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Introduction: Endometriosis is one of the most common benign gynecological diseases, causing pain and infertility in women of reproductive age. Endometriosis is commonly regarded as a complex trait caused by the interplay between genetic and environmental factors. There is a rapidly increasing interest in identifying genes and genetic polymorphisms that predispose women to increased risk of developing endometriosis. The impetus for evaluating the link of GSTM1 and e-NOS polymorphisms to endometriosis is due to the conclusion that endometriosis, as a chronic inflammatory condition is associated with lack of detoxification and GSTM1 is involved in the two-stage detoxification process while e-NOS may play a role in the development of endometriosis via angio-genetic enhancement.

Purpose: To evaluate the impact of GSTM1 & e-NOS gene polymorphism on development of endometriosis among Egyptian females.

Methods: Eighty eight women with an endoscopic diagnosis of endometriosis and 80 age matched normal females were included in this study. GSTM1 null polymorphism and e-NOS (Glu298Asp) gene polymorphism were evaluated using conventional PCR technique.

Results: Results have shown statistically significant differences of GSTM1 null genotype frequency among cases and control groups while no statistically significant difference was observed as regards genotype distribution of the Glu298Asp polymorphism between women with and without endometriosis.

Conclusion: This study showed the presence of association between GSTM1 gene polymorphism and risk of endometriosis in Egyptian population. Genetic associations are often inconsistent across ethnic barriers. The results of this study provide the rationale for further studies with larger sample sizes and in different ethnic populations.

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Preconception sex-hormone binding globulin (SHBG) as a valuable predictor for gestational diabetes mellitus in infertile Chinese women with polycystic ovary syndrome

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We aim to elucidate whether preconception SHBG levels are predictive of GDM in women with PCOS. A prospective cohort study was conducted between January 2010 and December 2013 in Ob & Gyn Hospital of Fudan University. A total of 94 infertile Chinese women treated with ovulation induction were recruited and then prospectively followed up until 6 weeks after delivery. Serum SHBG levels before conception was measured. Diagnosis of GDM was based on a 2-hours, 75 g oral glucose tolerance test (OGTT) performed between 24 and 28 weeks of gestation. We examined the incidence of GDM and plotted a receiver operating characteristic (ROC) curve to assess discrimination. We found that 31 (32.98%) were diagnosed with GDM in the 94 pregnant PCOS women. The SHBG levels in women with GDM were (41.5±37.5) nmol/L, significantly lower than (123.7±95.7) nmol/L in those without GDM (P=0.000 and P=0.041, even after BMI was adjusted). And the area of insulin under the curve (IAUC) in GDM group was (389.6±153.7) mIU/ml, significantly higher than (252.4±93.3) mIU/ml in the non-GDM group (P=0.000, and P=0.003, even when BMI was adjusted). The area of SHBG and IAUC under the ROC was 80.8% (95% confidence interval [CI] 0.692-0.925, P=0.000) and 0.786 (95% CI 0.656-0.916, P=0.001). The optimal cut-off value for detecting GDM was a SHBG ≤37.26 nmol/l and an AIUC≥313.42 mIU/ml. SHBG associated with IAUC predicted the risk of GDM with a sensitivity and specificity of 77.8% and 77.5%. We concluded that SHBG levels before conception might be a valuable predictor of GDM in pregnant women with PCOS.

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