



## Pathogenetic effects of folate-containing combined oral contraceptive in patients with PCOS

*Yulia Absatarova, Elena Andreeva*  
*Endocrinology Research Centre, Moscow, Russia*

Hyperhomocysteinemia plays a role in the development of cognitive dysfunction and depression. Along with metabolic disorders, PCOS is known to have negative consequences for the psychological sphere of patients. Such psychosocial disorders as depression, anxiety, dissatisfaction with one's body, episodic bulimia and decreased sexual satisfaction are widespread. These accompanying mental problems affect the quality of patient's life.

**Objective.** To study the effects of folate-containing combined oral contraceptive (COC) with drospirenone on hyperandrogenism and the severity of anxiety and depression in patients with PCOS compared to COC without folate.

**Methods.** Questionnaire based on the hospital scale of anxiety and depression HADS, anthropometric measurements (body mass index (BMI), waist / hip circumference), evaluation of the severity of hirsutism on the Ferriman-Hallway scale, the examination of the concentration of testosterone and insulin in blood serum initially and after 3 months of observation.

**Patients.** 85 patients with PCOS at the age of 17-35 years. Interventions: 30 women received a COC containing 3 mg of drospirenone, 30 µg of ethinyl estradiol and 451 µg of calcium levomefolate (1 group), 30 women received a COC containing 3 mg of drospirenone and 30 µg of ethinylestradiol (2 group), 25 patients did not receive a therapy (3 group).

**Result.** After 3 months of therapy a statistically significant decrease in testosterone and hirsut-number in the groups of patients receiving COC was observed in with the initial parameter ( $p < 0.05$ ). Metabolic profile of patients (BMI, waist / hip circumference and insulin level) of all groups did not change in the background of 3 months of follow-up. All patients showed signs of anxiety and / or depression initially, after 3 months of treatment in the folate-containing contraceptive group, signs of anxiety and / or depression were almost completely stopped ( $p < 0.05$ ), in the 2nd group the borderline state of patients remained.

**Conclusions.** The effect of folic acid and its active forms on the metabolic parameters and psychosocial status of patients with PCOS can increase the effectiveness of treatment, especially in patients with severe depressive disorders due to the clinical manifestations of this disease, and the replacement of the deficiency of this compound with COC containing folate in the pre-conception period will help reduce the risk of congenital malformations of the offspring.

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Эндокринологический  
научный центр