

## **Examination of Activated Protein C related Morbidity and its Prevention in an Obstetrics and Gynecology Cohort**

The risk of thrombosis is significantly increased in women with acquired or inherited thrombophilia, especially while on oral contraceptives or menopausal hormone therapy, and during pregnancy/maternity. One of the most frequent causes of inherited thrombophilia is the Leiden mutation of coagulation factor V (LFV), the phenotypic manifestation of which is activated protein C (APC) resistance. It's prevalence in the Caucasian population is 4-7%, as such population level screening is not recommended. According to our findings, as compared to the Western European average the incidence of Leiden mutation in the Hungarian population is considerably higher. The incidence of heterozygous Leiden mutation is 9.3%. We characterized the reproductive health status in those with APC resistance and found that the incidence of spontaneous abortion, sterility and thrombosis was 2.72, 4.04 and 2.54 times higher than those who were APC sensitive, respectively. In those using oral contraceptives (OC) in the APC resistant group, the relative risk for thrombosis was 25.8%. Anti-phospholipid antibody titers were elevated in 19.8% of those on OC and 9.4% of those not using OC. The risk for abnormal elevations in anti- $\beta_2$  glycoprotein I antibody titers was 2.41 times higher in heterozygous LFV OC users as compared to non-users. APC resistance can be determined by a functional test and provides correct interpretation of the Leiden mutation status.

We examined the efficacy of LMWH prophylaxis in the prevention of pregnancy and maternity related thromboembolism. Thrombosis prophylaxis in LFV carriers reduced the risk of deep vein thrombosis (DVT) during pregnancy, but did not influence the incidence of premature birth, preeclampsia, placental failure, growth retardation, uterine inertia, placenta detachment and postpartal bleeding.

In symptomless LFV carriers, where the risk of DVT is low, there seems to be no need for compulsory prophylaxis. On the other hand, in women with combined defects, the risk for DVT is considerably increased, necessitating compulsory prophylaxis during pregnancy. Timely LMWH prophylaxis significantly reduces the risk of premature termination in LFV carriers.