

## **ABSTRACT**

**Background:** Thromboembolic disease is one of the most common causes of pregnant women morbidity and mortality. The pregnancy period is often the first time, when the apparent congenital or acquired thrombophilia is identified. Patients with thrombophilia have an increased risk of pregnancy complications. The optimal anticoagulant prophylaxis helps to prevent these complications.

**Methods:** The presented work is focused on monitoring of coagulation parameters, blood counts and acute phase proteins in pregnant women (N = 68) with thrombophilia treated with enoxaparin during pregnancy and it is also concerned with evaluation of effectiveness of anticoagulant therapy during pregnancy using anti FXa activity determination based on inhibition of FXa weight, coagulation parameters and acute phase proteins. In the first and the second part of the study, there is no control group of pregnant patients with severe thrombophilia, but no anticoagulation – this is justified by ethical reasons. In the third part, we examined by questionnaire our patients for enoxaparin adverse reactions at the injection site. Finally, the last part is focused on evaluation of enoxaparin effects on bone remodelling markers, compared with a group of pregnant women without anticoagulation.

**Results:** During the pregnancy, the patients are undergoing numerous changes in coagulation parameters, blood counts and acute phase proteins. The concentration of FXa was decreasing with the increasing weeks' gestation. As early as in the 15th week there were 10.29% of patients below the recommended prophylactic range. We found statistically significant negative correlation between BMI, weight, fibrinogen, D-dimers and inhibition of anti-FXa. Adverse reactions at the injection of enoxaparin were reported to be relatively frequent. No patient went through severe bleeding. Regarding the markers of bone remodelling, there was not found any significant difference between the groups of treated pregnant patients and the control untreated group.

**Conclusion:** Pregnancy is a hypercoagulable state. The efficiency of enoxaparin assessed by inhibition of FXa is influenced by many factors during pregnancy, therefore we recommend regular monitoring.