Abstract:

Pregnancy in women suffering from type 1 diabetes mellitus is associated with various complications and risks for both the mother and the baby both during pregnancy as well as during the delivery and in the postpartum period. For this reason, it is essential to ensure proper treatment and compensation of the disease. Proper diabetes compensation and treatment of any associated diseases before and during pregnancy is the basis for a successful pregnancy. If possible, pregnancy should be planned to coincide with a period of the best possible diabetes compensation. Treatment of diabetes in pregnancy includes lifestyle modification (diabetic diet and exercise), regular self-monitoring of glycaemia and insulin therapy with insulin pens or an insulin pump.

The subject of the thesis is type 1 diabetes mellitus in pregnancy. The aim was to compare the outcomes of treatment with insulin pens vs insulin pump with regard to diabetes compensation, course of pregnancy and delivery and, lastly, foetal complications. The theoretical part of the thesis summarizes current knowledge about type 1 diabetes mellitus in pregnancy. The practical part compares the treatment with insulin pens vs insulin pump. The results are presented in form of statistical analysis of data in women treated with insulin pens or insulin pump.

It was found that there was no statistically significant difference between outcomes of treatment with insulin pen vs insulin pump in type 1 DM pregnant women. Although patients treated with insulin pens tended to have better outcomes, the results did not reach statistical significance. The following values were monitored during the 6 medical check-ups: glycated haemoglobin, estimated glycated haemoglobin, coefficient of variation, mean glycemia, glucose TIR (time in range) and TAR (time above range). Also, patients treated with insulin pens had lower insulin requirements and fewer perinatal and neonatal complications. However, they had more hypoglycaemic episodes. On the other hand, patients treated with insulin pumps had fewer hypoglycaemia episodes.

The main significant difference between the 2 groups of patients was in the level of estimated glycated haemoglobin at V2 (p-value of 0.006), at V3 (p-value of 0.029), and at V4 (p-value of 0.006). The group of patients treated with insulin pens had a significantly lower level of estimated glycated haemoglobin.

To conclude, it was found that the outcomes of treatment with insulin pump and insulin pens in pregnancy were similar. Proper compensation of glucose levels in patients with type 1 DM during the pregnancy by a given type of treatment is of vital importance.

Key words: type 1 diabetes mellitus, pregnancy, monitoring of glycaemia, compensation, diet, treatment