ABSTRACT

Background

The aim of this diploma thesis was to determine and evaluate changes in resting energy expenditure and oxidation of nutritional substrates, then to assess connections with other parameters and to compare these results with other conducted studies.

Methods

Indirect calorimetry was used to determine resting energy expenditure and oxidation of nutritional substrates. Measurements of pregnant women took place after a 12-hour fast in three periods of pregnancy. The first period between 17.-27. week of pregnancy, the second between 28.-35. weeks of pregnancy and the last during the 36th-38th week of pregnancy.

Results

The results of the work point to significantly increasing values of respiratory quotients ($p = 0.022$) and carbohydrate oxidation ($p = 0.015$) with the length of pregnancy, and to statistically significant correlations between the oxidation of nutritional substrates and the values of RQ, NPRQ, the volume of excreted urine, the amount of creatinine, urea and nitrogen in the excreted urine.

Conclusions

In this work, an increase in respiratory quotient values and carbohydrate oxidation during pregnancy was confirmed. However, the suspension of the study due to the Covid situation caused a decrease in the number of pregnant women followed and the necessary results.

Key words: pregnancy, indirect calorimetry, resting energy expenditure, oxidation of nutritional substrates, carbohydrates, lipids, proteins