1 Abstract

Background: Energy expenditure in pregnancy of Czech women is a lowly explored part of energy metabolism.

Objective: The purpose of this study was to estimate total energy expenditure and basal metabolic rate in pregnant women in the Czech Republic and to compare our values with values presented in foreign literature.

Design: Energy expenditure was estimated in 248 women from the Czech Republic. The method was based on filling the questionnaires where women described all of their activities of a certain day. Women also gave details of an exact time of duration for each activity. For mathematical assessments there were used two computer programmes: a specially designed program Energetic expenditure 2 and a statistic program GraphPad Prism 4. As the values of basal metabolic rate were considerated values obtained by multiplication of pre-pregnancy basal metabolic rate calculated according to Schoefield equations and multiplication factors for certain trimester of pregnancy (1,04, 1,07 a 1,19 for the first, second and third trimester, respectively). The same multiplication factors were used for estimation of total energy expenditure. In the study there are described also other energy characteristics – activity energy expenditure (AEE), physical activity level (PAL).

Results: In our study there were values of basal metabolic rate 1809±193 kcal/day on average. There was seen a gradual increase in these values during the pregnancy. This increase was gained also in relation to BMI of women. The average values of total energy expenditure in all our women were 3108±614 kcal/day. In the first trimester (till the 13th week of pregnancy) it was 2364±387 kcal/day on average, in the second trimester (from the 14th to the 26th week of pregnancy) 2829±414 kcal/day and in the third trimester (from the 26th week of pregnancy) it was 3456±609 kcal/day. Our study acknowledged world trend of increase in total energy expenditure during pregnancy. The values of AEE in all women were 1299±457 kcal/den on average. With the progress of pregnancy, this energy characteristic was rising which shows the opposite trend than which is presented in foreign literature.

Conclusion: Our study acknowledged the gradual increase in values of total energy expenditure and basal metabolic rate during pregnancy. However, it did not acknowledge the world trend of reduction in activity with the progress of pregnancy, The study acknowledged that in comparison with women from foreign countries women from the Czech Republic stay

relatively physically active during the pregnancy and as a result of this fact the pregnancy demands more energy.