ABSTRACT

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Title of master thesis: Influence of nutrition on changes in body composition in pregnant and lactating women

Background

The aim of the work was to evaluate changes in parameters of body composition determined by bioimpedance analysis during pregnancy and lactation. At the same time, we wanted to find out relationship between individual parameters and total energy intake and intake of macronutrients namely carbohydrates, lipids and proteins.

Methods

Body composition parameters were determined by using instruments that are based on the bioimpedance analysis method. Bioimpedance analysis determines the parameters of a body composition from the resistance that various biological tissues show against a weak electric current passing through the body during the measurement. This method is non-invasive, fast, easy to use and also suitable for evaluating body composition in pregnant and lactating women. NutriDan nutritional software was used to evaluate data on energy intake and individual macronutrients obtained from the weekly questionnaire.

Results

During pregnancy, body weight increased in women and decreased after birth during lactation. We observed significant differences in weight loss between these periods. The largest difference in weight values, i. e. 13.8 kg was between measurement just before delivery and measurement during the 9th month after delivery. In the case of total body water, we detected the highest value just before delivery and its decrease as well as a decrease of body fat occurred due to weight loss in the 3rd - 4th week after delivery. The decrease of total body water also resulted in an increase of resistance characteristics. In the case of the interdependence between the total energy intake, the intake of individual macronutrients and the body composition parameters of pregnant and lactating women, we found several mutual associations using correlation analysis. These associations mostly concerned lactating women. We detected the most associations with intake of carbohydrates in grams. During pregnancy, we detected associations only with intake of carbohydrates and proteins.

Conclusions

During pregnancy and lactation, women's body composition parameters change. Significant differences in these parameters were detected during lactating, specifically up to 6 months after delivery in comparison with pregnancy. This study also demonstrated the effect of nutrition on changes in body composition in women during pregnancy and lactation.

Key words: body composition, bioimpedance analysis, nutrition, pregnancy, lactating