

ABSTRACT

Background

The aim of diploma thesis was to evaluate resting energy expenditure (REE) and substrate oxidation in Czech lactating women and their relation to measured anthropometric parameters.

Methods

The indirect calorimetry was used to assess REE. Subsequently, the oxidation of substrates was calculated. At the same time were measured anthropometric parameters of breastfeeding women. Then the correlation was investigated. The total amount of examination were three times. First was in the time three weeks after birth, the second one was three months postpartum and the last was six months after birth.

Results

The mean values of REE in lactating women were 1577 ± 93 kcal/day in the time of three weeks after birth. Three months after birth it was 1622 ± 140 kcal/day. Six months after birth it was 1545 ± 80 kcal/day. Significant positive correlation was proved between REE and triceps skinfold thickness ($r = 0,98$; $P < 0,05$) and also chest circumference ($r = 0,99$; $P < 0,05$). Both were three weeks after birth.

Breastfeeding women had a value of lipid oxidation 60 % of substrate oxidation three weeks postpartum, which decreased to 46 % three months postpartum due to sharp increase (from 8 % to 18 %) of carbohydrate oxidation value. This increase could correspond to the preferential use of glucose by the mammary gland.

Conclusion

The study proved correlation between REE, substrate oxidation and anthropometric parameters. We also described various mobilization of fat stores from pregnancy and their relation.

Keywords: resting energy expenditure, lactation