

Abstract

Background

The aim of this work was to determine changes in resting energy expenditure in three periods of pregnancy using indirect calorimetry and assess correlations between the obtained resting energy expenditure values and anthropometric parameters.

Methods

To determine resting energy expenditure was used indirect calorimetry, which measured oxygen consumption and carbon dioxide production, from which this value was calculated. Measurements were performed in seven healthy pregnant women. Measurements took place over three periods. The first examination took place from the 17th to the 27th week of pregnancy, the second from the 28th to the 35th week of pregnancy and the third from the 36th to the 38th week of pregnancy.

Results

We found that resting energy expenditure values increased with pregnancy length ($REE_1 = 1670 \pm 148$ kcal/day; $REE_2 = 1717 \pm 230$ kcal/day; $REE_3 = 1984 \pm 209$ kcal/day). Also, correlations have been found with age, body weight, fat free mass and fat mass, body surface area, body mass index, and other parameters.

Conclusion

During pregnancy many changes happen, including metabolic changes. We acknowledged that with increasing duration of pregnancy REE increases, most significantly at the end of pregnancy. This increase is related to a large number of factors, as correlation analysis confirmed.

Keywords: Resting energy expenditure, Indirect calorimetry, Pregnancy