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The difference in changes of maternal body weight and body composition by body mass index during second trimester

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Obesity is a major contributing factor in development of many chronic diseases. Several reports have been pointed obesity in women is related to excess weight gain during pregnancy or weight retention after delivery. Pregnancy women undertaken dramatic changes in body weight and body composition occur in a short period of time. The race, parity, socio-economic factors are influenced on changing patterns of weight gain and body composition. The purpose of this study was to evaluate the difference in changes of maternal body weight and body composition in under weight, normal weight and over weight women during second trimester. 116 pregnant women were recruited this study and divided into 3 groups according to BMI categories defined by WHO, as under weight, BMI < 18.5; normal weight, 18.5-24.9; over weight 25-29.9. The BMI was calculated by using pre-pregnant weight and height. The changes of body composition were measured using bioelectrical impedance analyzer. The weight gain during second trimester is significantly different among the groups ($p<0.05$). The amount of weight gain is highest in under weight group and follows normal weight group and over weight group. The changing weight composed 56% of body fat and 44% of lean body mass in under weight group, 63.5% of body fat and 36.3% of lean body mass in normal weight group. Whereas the over weight group is decreased body weight during second trimester, the changing weight is in 30.4% in body fat and 69.6% in lean body mass. This study showed the amount of weight gain during second trimester is different by maternal pre-pregnant body mass index. The composition of weight gain is similar between under weight group and normal weight group. Also maternal age, parity and degree of morning sickness also influenced weight gain during second trimester.