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Body composition in adults newly diagnosed with Type 2 Diabetes: Effects of metformin

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Background: The aim of this study was to measure the body composition in adults with newly diagnosed Type 2 Diabetes Mellitus and to explore the effect of metformin therapy on the various components of body composition, insulin sensitivity, and glucose homeostasis.

Methods: This was an observational study consisted of 51 newly diagnosed people with Type 2 Diabetes on 1000 mg metformin twice daily for 6 months. The body composition of each subject was measured by dual energy X-ray absorptiometry at enrollment and 24 weeks after metformin mono-therapy. Sarcopenia was defined and compared based on the ratio of appendicular skeletal muscle and height squared, skeletal muscle index and residual methods. Homeostasis model assessment-insulin resistance and Quantitative Insulin Sensitivity Check Index were used for estimating insulin sensitivity. The level of physical activity was assessed using self-administered international physical activity questionnaire.

Results: Forty one subjects (80.4%) completed the study. The mean age of the participants was 52.67±10.43 years. Metformin treatment was associated with a significant decrease in total fat mass (-1.6 kg, P=0.000). By week 24, the lean to fat ratio increased (P=0.04) with men showing greater significant changes. Twenty percent of the female participants were detected to have sarcopenia. In addition, there was a significant improvement of glucose homeostasis and insulin sensitivity.

Conclusions: Metformin therapy results in significant improvement in body composition and insulin sensitivity of adults with newly diagnosed Type 2 Diabetes. Furthermore, sarcopenia begins in women with Diabetes much earlier than expected as an age related phenomenon.

Biography

Zahra Banazadeh is currently working at University of Medical Sciences, Iran

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