Obesity and Iron Status in Women of reproductive age

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Abstract

Background and Objectives: Women of reproductive age are at risk of Iron deficiency. Some Studies reported That There is a relationship between Body indices and iron. Iron overload is also harmful. It enhances the risk of cardiovascular disease which is due to increased Lipid peroxidation. The aim of this study was to investigate the relationship between obesity and iron status in women of reproductive age.

Material and Methods: In this case-control study, the relationship between iron status and obesity in women of reproductive age was studied in 35 obese (BMI≥30kg/m²) and 35 non-obese (BMI=19-25kg/m²) women matched by age. Demographic data was gathered by a questionnaire. Body weight and height were measured and body mass index (BMI) was calculated for each subject. After taking Venous blood samples and separating plasma, we investigated iron status by measuring hemoglobin, hematocrit, and plasma iron and ferritin concentrations.

Results: Although no difference is observed in plasma iron and Total Iron Binding Capacity (TIBC), the results of obese group show significant higher hemoglobin (137 ± 8 versus 129 ± 7 g/L, $p<0.05$), hematocrit (0.41 ± 0.02 versus 0.38 ± 0.03, $p<0.05$), and plasma ferritin concentrations (49.3 ± 32.2 versus 28.6 ± 19.7µg/L, $p<0.001$). In addition, BMI was positively correlated with hemoglobin (rho=0.29, $p<0.001$), hematocrit (rho=0.28, $p<0.001$), and plasma ferritin concentrations (rho=0.39, $p<0.0001$).

Conclusion: we conclude that obese women of reproductive age have higher iron stores than the non-obese women. Therefore, obese- reproductive women are at low risk of depleting iron stores. On the other hand, systematic iron-fortification programs may enhance the prevalence of iron overload in these subjects.

Keywords: Obesity, iron status, reproductive age women