

Obesity-Associated Vitamin D Insufficiency Among Women

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Abstract : Vitamin D insufficiency is highly prevalent in women. Vitamin D bioavailability could be reduced in obesity due to increased sequestration by white adipose tissue. Increased sun exposure due to more frequent outdoor physical activity as well as a diet rich in vitamin D could be the common cause of both higher levels of 25(OH)D and a more favorable lipid profile. The study was conducted with the aim to assess the obesity status among selected working women in Coimbatore, determine their lifestyle and physical activity pattern, study their dietary intake, estimate the vitamin D and lipid profile of selected women and associate the relationship between Vitamin D and obesity among the selected women. A total of 100 working women (non pregnant, non lactating) working in IT sector, hotels and teaching staff were selected for the study. Anthropometric measurements and dietary recall were conducted for all. The women were further categorized as obese and non-obese based on their BMI. Fifteen obese and 15 non-obese women were selected and their fasting blood glucose level, serum Vitamin D and lipid profile were measured. Association between serum vitamin D, lipid profile, anthropometric measurements, food intake and sun exposure was correlated. Fifty six percent of women in the age group between 25-39 years and 44 percent of women in the age group between 40-45 years were obese. Waist and hip circumference of women in the age group between 40-45 years (89.7 and 107.4 cm) were higher than that of obese women in the age group between 25-39 years (88.6 and 102.8 cm). There were no women with sufficient vitamin D levels. In the age group between 40-45 years (obese women), serum Vitamin D was inversely proportional to waist-hip ratio and LDL cholesterol. There was an inverse relationship between body fat percentage and Total cholesterol with serum vitamin D among the women of the age group between 25-39 years. Consumption of milk and milk products were low among women. Intake of calcium was deficit among the women in both the age groups and showed a negative correlation. Sun exposure was less for all the women. Findings from the study revealed that obese women with a higher consumption of fat and less intake of calcium-rich foods have low serum Vitamin D levels than the non-obese women. Thus, it can be concluded that there is an association between Vitamin D status and obesity among adult women.

Keywords : obesity, sun exposure, vitamin D, women

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