Relationship between fruits and vegetables intake and bone mineral density in rural population surrounding Tehran

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Abstract

Introduction: Osteoporosis is a major health problem because of the large health care costs associated with its clinical consequences. It is therefore of great important to identify modifiable risk factors. We investigated associations between fruit and vegetable intake and bone mineral density in rural population surround Tehran.

Materials and Methods: The study population was a subgroup of a large study on the prevalence and causes of vitamin D deficiency in rural population surround Tehran.Fruit and vegetable intake of 82 subjects whose bone mineral density (BMD) was measured and had a 24 hour food recall, was assessed.Weight and height was measured by standard methods. BMD was measured by Dual X-Ray (DXL) (Calscan) method at the heels.

Results: Osteopenia and osteoporosis rate in women older than 50 were 55.5% and 33.3% and in men 69.2% and 7.7% respectively. The chance of having osteoporosis in women was 4.33 of men (RR= 4.33). Fruit intake was not correlated with BMD. Vegetable intake was positively associated with BMD just in women. According to interquartile range of vegetables intake women were grouped as those consuming less than 1.5 serving of vegetables per day and those consuming more. The women reporting consuming more than 1.5 serving of vegetables had significantly higher T-score (-1.1±0.8 compared with -1.9±1.0, $P<0.01$). Those consuming more vegetables had high intake of some nutrients such as vitamin C, vitamin A, potassium, magnesium, zinc, folate, iron, sodium, calcium and phosphorus but none of them except for vitamin A ($r=0.03$, $P<0.05$) was correlated with BMD.

Conclusion: High consumption of vegetables positively affects bone mineral density in women and daily intake of at least 1.5 servings of vegetables is recommended to prevent osteoporosis.

Key Words: Osteoporosis, BMD, Fruits, Vegetables, Rural population, and Diet pattern.

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