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A study on osteoporosis of Jalna District

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Abstract

Calcium is an essential component in bone formation, Without supply of sufficient calcium bones can becomes thin, bristle and occurs rickets in children's and osteomalacia in adults. So calcium and vitamin D protects older adults from osteoporosis, Osteoporosis is a disease that weakens the bones making them thinner and less dense leading to fracture. According to the World Health Organization (WHO), 30% of postmenopausal women suffer from osteoporosis. It has been reported that around six crore people in India have osteoporosis and 80% of them are women. The peak incidence of osteoporosis in India occurs 10-20 years earlier than in western countries. Based on t score of BMD obtained, participants were labelled as normal (T-score up to -1), osteopenia (t-score -1.1 to -2.4) and osteoporosis (t-score -2.5). These observations were taken in village camp of Jalna District. While normal respondent were very less i.e., 9% of which 2% male and 7% female were observed. Over all prevalence of osteopenia and osteoporosis was 63% and 28% respectively.

Keywords: WHO, Calcium, Osteoporosis, t-score, osteomalacia

Introduction

Calcium is an essential component in bone formation, which builds strong healthy bones, Unfortunately, research shows that over 70% of women ages 51 to 70, and nearly 90% of women over 70 are not getting an adequate intake of calcium and supplements and low level of vitamin D because of lack of exposure to sunlight which is associated with reduced calcium absorption, bone mineral loss and increased risk of fractures. Without supply of sufficient calcium bones can becomes thin, bristle and occurs rickets in children's and osteomalacia in adults. So calcium and vitamin D protects older adults from osteoporosis, Calcium deficiency causes osteopenia, osteoporosis causes the painful bone disease osteomalacia and increase muscles weakness and risk of fractures.

Osteoporosis is the most common bone disease in human beings and occurs in both sexes. Osteoporosis derived from the Latin word meaning "porous bone". Osteoporosis is a disease that weakens the bones making them thinner and less dense leading to fracture. It's a condition associated with a loss in bone density and bone mass and is primarily found in middle age and elderly women due to lower levels of estrogen. Females are eight times more at risk of getting osteoporosis than are males. Half of all postmenopausal women can expect to develop some degree of osteoporosis. Its major symptom is an increased risk for fractured bones and also weak and fragile bone in the hip, spine and wrist.

According to WHO the prevalence of osteoporosis among U.S., women post menopause is estimated to be 14% in age of 50 to 59 yrs, 22% in those aged 60 to 69yrs., 39% in those aged 70 to 79 yrs, 70% in age 80yrs, and older. A study to access the incidence of osteoporosis fracture was conducted among women admitted to the hospital by NIN (98-99). It was observed that over 55% of women above the age 40yrs has osteoporosis fractures, which confirms the problems of early onset of osteoporosis particularly among low socio-economic group. People in India are increasingly suffering from osteoporosis due to vitamin D, calcium deficiency and poor diet. Up to 12 million Indians have osteoporosis. Insufficient intake of calcium and vitamin D during childhood. High intake of steroid also has negative effect on osteoporosis risk.

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Indian women likely suffer from the condition of number of fractures among knee and women over the age of 45. Osteoporosis in India is approximately 22.9% among adults, with a higher prevalence among females 26.3% as compared to males 10.9%. According to researcher, Sushrut Babhulkar and Shobhit Seth, among adults, nearly one out of two have osteopenia and one out of five has osteoporosis. Osteoporosis prevalence was higher in women and in the elderly. Nearly one out of three women in post-menopausal age group has osteoporosis.

According to the World Health Organization (WHO), 30% of postmenopausal women suffer from osteoporosis. It has been reported that around six crore people in India have osteoporosis and 80% of them are women. The peak incidence of osteoporosis in India occurs 10-20 years earlier than in western countries.

Objectives

The situation of osteoporosis in our country is alarming so following objective are framed for the study

1. To determine the prevalence of osteoporosis in women and men.

Table 1: Age group of respondents

Below 18yrs.		19-28yrs.		29-38yrs.		39-48yrs.		49-58yrs.		Above 59yrs.	
Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
00	15	05	21	5	8	5	10	11	07	11	03

Table 2: Respondents of bone mineral density 't' score test

Normal (upto-1)		Osteopenia (-1.1 to -2.4)		Osteoporosis (-2.5)	
Male	Female	Male	Female	Male	Female
2	7	25	38	12	16

100 respondents were analyzed; Irrespective of age group everyone showed deficiency of calcium. Among females 10% were postmenopausal women in the age more than 50 years. Whereas In the age group 19 to 28 yrs, 29 to 38 yrs and 39 to 49 yrs osteopenia were observed more because of less exposure under sunlight and their lifestyle with work under roof or work on pc or computer. In the age group of 49 to 58yrs and Above 59 yrs osteoporosis were observed because of age problem, calcium metabolism, less exposure to sunlight and low economic group. 63% respondents were osteopenia among them 25% male and 38% female were observed. 28% observations were found that osteoporosis among 12% male and 16% female. While normal respondent were very less i.e., 9% of which 2% male and 7% female were observed. Overall prevalence of osteopenia and osteoporosis was 63% and 28% respectively.

Conclusion

Osteoporosis prevalence was higher in women and elderly. There is need to increase the awareness about bone health regarding their diet and importance of vitamin D in the village group respondents of Jalna district and discussed about intake of calcium, vitamin D supplementation in men and women for all the age group. To reduce the osteoporosis following prevention and awareness are taken into consideration.

Recommendation and Awareness Program

- Proper Nutrition.
- Life style Changes.
- Exercise.
- Medications and routine checkup for the Osteoporosis.

2. To give the knowledge regarding osteoporosis, treatment and prevention of osteoporosis.

Methodology

In this study, 100 sample were examined. Participants were healthy adults (aged 18 years and above) evaluated by "Bone Densitometry" for bone mineral density (BMD) of left foot. There are many methods of detecting osteoporosis and osteopenia. Based on t score of BMD obtained, participants were labelled as normal (T-score upto-1), osteopenia (t score-1.1 to-2.4) and osteoporosis (t score-2.5). These observations were taken in village camp of Jalna District.

Results and Discussion

Osteoporosis is becoming increasingly common situation in India. In young people in good health, the rate of calcium reabsorption equal that of bone formation. As Age related changes in vitamin D and calcium metabolism, increase the risk on bone health or reabsorption begins to predominate over the bone formation, eventually resulting in osteoporosis. In osteoporosis the total amount of bone is reduced.

1. Proper Nutrition

- Plenty of fruits and green leafy vegetables.
- Ragi, sesamum (Till seed), Curry leaves, Rajgera and Milk and milk product
- A meat based diet should probably contain not more than 180 gm of meat per day.
- Reduces the intake of tea and coffee because of caffeine. Not more than three and half cups of coffee and 7 cups of tea.
- Calcium and Vitamin D are the important nutrients for preventing osteoporosis which helps bone becomes strong and healthy. So Vitamin D is essential for absorption of calcium.
- An intake of 1000 to 1500mg of calcium is prescribed for postmenopausal women.
- Recommended calcium and vitamin D intake: As per NIN-ICMR 2020-800 to 1000 mgm per day Calcium and 400IU per day Vitamin D were recommended for the age group of 18yrs to adults.

2. Lifestyle

- Avoid drinking and smoking.
- Avoid continuous working in closed rooms.

3. Exercise

- Do best physical exercise regular at least 30 min a day, three times a week. Exercise not only improve strength, posture, they increase the bone density.

4. Medications

- Routine checkup for the Osteoporosis.
- Estrogen, Progesterone, Thyroxine and parathyroxine are

essential hormones in human body to reduce osteoporosis.

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