



Evaluation of BMD of women above 40 years of age

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OBJECTIVE(S) : To find the incidences of osteopenia and osteoporosis and their relation with age, diet and menstruation in women above the age of 40 years.

METHOD(S) : Successive 200 women attending our well women clinic from January 2002 to December 2003 had their BMD estimated by DEXA. The results were analyzed.

RESULTS : After the age of 60 years there was an almost 100% incidence of either osteopenia or osteoporosis. In the age group between 40 and 65 years, the incidence of osteopenia was 34% and osteoporosis 8%.

CONCLUSION(S) : A substantial female population has osteopenia and osteoporosis after the age of 40 years.

Key words : osteopenia, osteoporosis

Introduction

The proportion of elderly population is rapidly increasing in the developed as well as the developing world. The aging population and public health workers are concerned about the disability, dependence, and associated economic and social problems that are caused by osteoporosis. Osteoporosis does not have a dramatic clinical presentation except when fractures result. It is therefore, called a 'silent epidemic'. Tools like dual energy x-ray deabsorptiometry (DEXA) have come to our rescue for screening women who would be more prone to osteoporosis enabling us to manage them in a better way. It has helped us to improve the quality of life. Measurement of bone mineral content may help identify women likely to develop osteoporosis.

Tools like DEXA for estimating bone mineral density (BMD) are not yet easily available in India. Very few centers are equipped with these facilities. Besides the level of awareness in general population regarding this sophisticated but important investigation is very low. Thus not much data

pertaining to Indian population with reference to BMD is available at present. In this study, we have tried to find the incidences of osteopenia and osteoporosis and their relation with age, diet, and menstruation in women above the age of 40 years.

Methods

We evaluated successive 200 women attending our well women clinic from January 2002 to December 2003 and analyzed the results of their BMD. Well women health check package is for women who are postmenopausal, want to start HRT or are already on HRT, have irregular and heavy menses, have lump in the breast, have family history of breast, ovarian or uterine cancer, have persistent or chronic white vaginal discharge, have early menopause, had hysterectomy, and are above 40 years of age. Of the 200 woman, 73 were vegetarian and 118 were still menstruating. All cases in our study had voluntarily opted for this package. All underwent BMD, mammography, pelvic sonography, x-ray chest, ECG and other basic investigations. BMD was measured by DEXA.

Results

Table 1 gives the age distribution. Maximum number of women viz., 32%, were in the age group of 45 to 50 years (Table 1).

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Table 1. Age distribution.

Age (year)	Number	percentage
41-45	58	29
46-50	64	32
51-55	42	21
56-60	22	11
61-65	08	03
Above 65	08	04
Total	200	100

Only 4% of women were above 65 years of age. None of the women in our study were on HRT.

Fifty-eight percent of women had normal BMD as per WHO criteria ($T > -1$ SD), 34% of had osteopenia ($T < -1$ SD to > -2.5 SD) while 8% had osteoporosis ($T < -2.5$ SD).

Table 2. Age wise distribution of osteopenic and osteoporotic women

Age (years)	Number (Percent)	Osteopenia	Osteoporosis	Osteopenia + osteoporosis (Percent)
41 – 45	58 (29)	16	Nil	27.57
46 – 50	64 (32)	25	05	48.87
51 – 55	42 (21)	10	04	33.32
56 – 60	22 (11)	07	03	45.41
61 – 65	06 (03)	04	02	100
Above 65	08 (04)	06	02	100
Total	200 (100)	68 (34%)	16 (8%)	42

Table 2 gives age wise distribution of osteopenia and osteoporosis.

No woman was found to be osteoporotic in the age group of 41 – 45 years. In the age group of 46 - 50 years, 5 women out of 64 were osteoporotic and 25 out of 64 had osteopenia (Table 2). Of the 16 osteoporotic women in the study 5 or 31.25% were still menstruating indicating good estrogenic activity. Similarly 15 of the 68 (51.47%) osteopenic women were still menstruating.

Table 3. (n=84).

	Osteopenia	Osteoporosis
Vegetarians	40	08
Nonvegetarians	18	04
Mixed diet	10	04

Fifty percent (8/16) of the osteoporotic women and 58.82% (40/68) of the osteopenic women were vegetarian (Table 3). May be poor calcium in vegetarian diet was responsible for this.

Discussion

Measurement of BMD is the gold standard test for the diagnostic evaluation of osteoporosis. DEXA is the method which is commonly used for this. DEXA scan can detect even a 1% loss of bone mass. BMD is an important diagnostic tool that not only measures the amount of calcium in certain bones but can also be used to estimate the risk of fractures. The test is easy, fast, painless and noninvasive. WHO definition of osteoporosis is based on BMD and T-scores using DEXA of the proximal femur and spine ¹.

The incidence of osteoporosis in our study was 8% and osteopenia 34%. Out of osteoporotic women 31.25% were in the age group 46-50 years and 25% in the age group of 51-55 years. Of the osteopenic women 51.47% were still menstruating and so were 31.25% of the osteoporotics.

Our study shows that above the age of 60 years there is an almost 100% incidence of either osteopenia or osteoporosis. Overall, in the age group of between 41 and 65 years, the incidence of osteopenia (34%) and osteoporosis (8%) together was 42%, which is quite substantial.

The worldwide incidence of osteoporosis is rising because of increase in the aging population and sedentary lifestyle. About one in every three postmenopausal women in USA is affected by osteoporosis. Approximately 60 million people at present have osteoporosis in India. As the life expectancy is increasing even in the developing countries, by the year 2035, the maximum number of osteoporosis cases in the world will be in India and China ². Hip fracture is the worst complication of osteoporosis, with substantial morbidity and high one year mortality. The rate of hip fractures is expected to triple over the next three decades ^{3,4}. Once the woman is in her fourth decade, there is a gradual loss of BMD. It is noteworthy that there is considerable increase in bone loss during the 5 years immediately following menopause. Extended lactation (more than 6 months) is also associated with bone loss ⁵.

In our study 50% of osteoporotic and 98.82% of osteopenic women had vegetarian diet. The vegetarians tend to have low BMD due to decreased amount of calcium in their diet ⁶. Osteoporosis was considered a disease of postmenopausal women. But in India, its incidence was found to be in the ratio of 4:6 in men and women ⁷. Young people with changing life style like dieting, smoking etc., have made themselves

even more vulnerable to osteoporosis at younger age⁷. The gynecologist plays an important role in establishing a biological zero in each perimenopausal patient and in controlling the rate of bone loss during postmenopausal period⁸. He also plays an important role in early detection, and in giving advice regarding diet, exercise, calcium supplementation and drugs.

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