

Original research article

To determine the prevalence of osteoporosis and osteopenia in a tertiary care centre

Dr Mukul Agrawal

Assistant Professor, Department of Orthopedics, Krishna Mohan Medical College & Hospital, Pali Dungra, Sonkh Road, Mathura, Uttar Pradesh, India

Corresponding Author:

Dr. Mukul Agrawal (drmukul18@gmail.com).

Abstract

Background: Osteoporosis is one of the emerging health issues in India. According to WHO criteria, osteoporosis is the reduction in bone mineral density of 2.5 standard deviation or more below that of the mean peak BMD of young adults when measured by dxa scan. It is a silent disease causing pain and fractures of the bone. Osteoporotic fractures are becoming a major cause for morbidity and mortality. In India more than 30 million population are affected osteoporosis.

Aims and Objectives: To determine the prevalence of osteoporosis and osteopenia in a tertiary care centre.

Materials and Methods: In this prospective study, After the Institutional ethical committee clearance, this study was carried out. In this clinical study the staff of were subjected to do BMD (Bone Mineral Density) measurement by Quantitative Ultra sound. Out of 104 patients 44 were Osteopenic and 22 were Osteoporotic. We have included Male and female between 30yrs to 58 yrs and Diabetic patients, Hypertensive patients Cardiac patients. And we have excluded the following patients, Pregnant ladies, Rheumatoid Arthritis patient on steroids, and patients having skin disease and having osteomyelitis.

Results and Observations: Out of 104 patients 44 were Osteopenic and 22 were Osteoporotic. More than 60% were affected due to Osteoporosis and Osteopenia. In menopausal women 62% were Osteopenic and 38% Osteoporotic. In hypertensive patients 42% were Osteoporotic and 33% were Osteoporotic . In diabetic patients 50% were Osteopenic and 37.5% were Osteoporotic

Conclusion: We found that Osteoporosis and Osteopenia are more prevalent in patients who are lacking with physical work and enough exposure in sun light and balance diet. Prevalence is more in post menopausal Women and with systemic diseases. Affected patients were advised to take calcium and vitamin D3 tablets and advised to do physical exercise and to follow dietary habits.

Keywords: Menopausal women, Bone Mineral Density(BMD), Osteoporosis, Osteopenia, Quantitative, Ultra Sound, Diabetic patients.

Introduction

Osteoporosis is one of the emerging health issues in India. According to WHO criteria, osteoporosis is the reduction in bone mineral density of 2.5 standard deviation or more below that of the mean peak BMD of young adults when measured by dxa scan.[1,2] It is a silent disease causing pain and fractures of the bone. Osteoporotic fractures are becoming a major cause for morbidity and mortality.[3] In India more than 30 million population are affected osteoporosis. Prevalence of osteoporosis and osteopenia is more in post menopausal women, old age and patient with systemic diseases. This asymptomatic condition often remain undiagnosed until it manifests as low trauma fractures. there are several limitation of dxa scan which prevent its usage in screening

of osteoporosis. Calcaneal quantitative ultrasound is a bone health assessment technique which has gained popularity in recent years.[4,5] Compared to dexta scan, qus offer wide accessibility to the public because of it is portability. Easy to handle and low emission of ionizing radiation. The purpose of this study is to determine the prevalence of the Osteoporosis and Osteopenia in the treated patients.

Materials and Methods: In this prospective study, After the Institutional ethical committee clearance, this study was carried out. In this clinical study the staff of were subjected to do BMD (Bone Mineral Density) measurement by Quantitative Ultra sound. Out of 104 patients 44 were Osteopenic and 22 were Osteoporotic. We have included Male and female between 30yrs to 58 yrs and Diabetic patients, Hypertensive patients Cardiac patients. And we have excluded the following patients, Pregnant ladies, Rheumatoid Arthritis patient on steroids, and patients having skin disease and having osteomyelitis. Calcaneal Quantitative Ultra sound is more reliable, most cost effective. Quantitative Ultra sound of calcaneal bone was used to calculate BMD (Bone Mineral Density) of right heel. This equipment itself convert the BMD (Bone Mineral Density) value into T SCORE. All good clinical practice guidelines (GCP) was followed. Clinical details about diabetes, Hypertension, Cardiac status, Menopause were recorded. These results were tabulated and analyzed statistically. Test of significance (CHI-SQUARE TEST and Z TEST) were applied whenever necessary.

Osteoporotic and Osteopenic Distribution: 1. Age wise Distribution 2. Sex wise Distribution 3. Menopausal Distribution 4. Distribution in Hypertensive Patient 5. Distribution in Diabetic Patient.

Results and Observations: Out of 104 patients 44 were Osteopenic and 22 were Osteoporotic and remaining normal. More than 60% were affected due to Osteoporosis and Osteopenia. In menopausal women 62% were Osteopenic and 38% Osteoporotic. In hypertensive patients 42% were Osteoporotic and 33% were Osteoporotic . In diabetic patients 50% were Osteopenic and 37.5% were Osteoporotic

Table 1: Osteopenic and Osteoporotic vs total cases.

Symptoms	No of patients	%
Osteopenic	44	42.3
Osteoporotic	22	21.2
Normal	38	36.5
Total	104	100

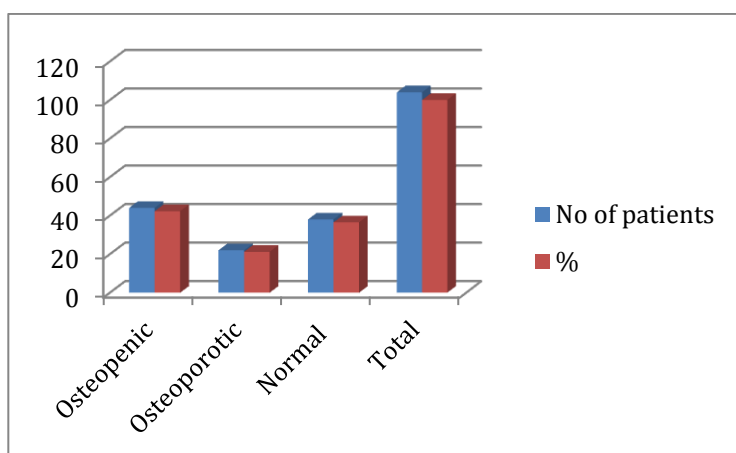


Figure 1- Osteopenic and Osteoporotic vs total cases

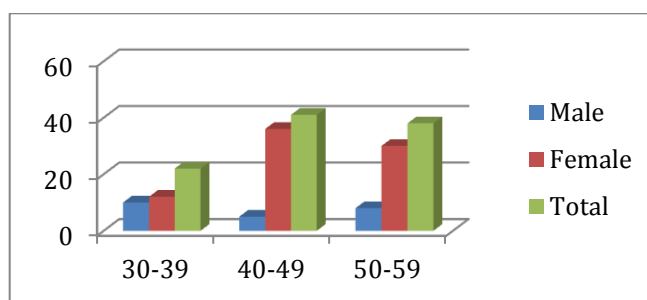


Figure 2-Sex distribution

DISCUSSION

Worldwide osteoporosis causes more than 8.9 million fractures annually. Osteoporosis is estimated to affect 200 million women World Wide.[6,7] Osteoporosis complications are a major health problem in India also, osteoporosis affects both urban and rural population. Disability due to Osteoporosis is preventable.[8,9] It is easy to measure Bone Mineral Density (BMD) by Quantitative Ultrasound method. We found that from our study Osteoporosis and Osteopenia are more prevalent in those patients who are lacking of physical work and enough exposure of sunlight. Patients with menopause and systemic diseases are more Osteoporotic and Osteopenic. This is the time to treat the high risk cases and to prevent major disability due to Osteoporosis and to prevent economic burden to the affected families. [10]

CONCLUSION

We found that Osteoporosis and Osteopenia are more prevalent in patients who are lacking with physical work and enough exposure in sunlight and balance diet. Prevalence is more in post-menopausal Women and with systemic diseases. Affected patients were advised to take calcium and vitamin D3 tablets and advised to do physical exercise and to follow dietary habits.

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