

# Frequency of Osteoporosis in Women Having Age $\geq 40$ Years (The Multidisciplinary Study)

Osteoporosis in Women Having Age  $\geq 40$

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## ABSTRACT

**Objective:** To determine the frequency of osteoporosis in women having age  $\geq 40$  years.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Liaquat University Hospital, Hyderabad / Jamshoro during January 2018 to April 2018.

**Materials and Methods:** This study was conducted on the women aged  $\geq 40$  years while the exclusion criteria were patients already on treatment of osteoporosis, known cases of connective tissue disorders (RA / SLE), and already on corticosteroids and immunosuppressive therapy. All the relevant females were explored for osteoporosis by taking detail clinical history, specific physical examination and along with baseline investigations the bone mineral density was determined through DEXA-BMD (dual energy x-ray absorptiometry) machine. The procedure is non-invasive and subjects with T-score less than -2.5 were considered as osteoporotic, the score between -2.5 & -1 was considered as osteopenic and the score  $> -1$  were taken as normal. The frequency and percentages were computed for categorical variables whereas the mean  $\pm$  SD was computed for numerical variables.

**Results:** During four months study period total fifty women of age  $\geq 40$  years were recruited and studied had mean age  $\pm$  SD identified as  $58.51 \pm 7.71$  (yrs). The diabetes mellitus was observed in 22 (44%), regarding residence urban and rural population were identified as 20 (40%) and 30 (60%) while the hypertension was observed in 22 (44%) whereas regarding the BMD the osteoporosis was seen in 28 (56%), osteopenia in 10 (20%) while it was normal in 12 (24%) women.

**Conclusion:** The osteoporosis is a silent disorder reflected as low bone density and ultimately leads to fractures.

**Key Words:** Osteoporosis, Women and Old age

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## INTRODUCTION

Osteoporosis is a disease characterized by microarchitectural deterioration of bone tissue and low bone mass leading to enhanced bone fragility and increase risk of fracture.<sup>1</sup> It is a common health trouble responsible for mortality and morbidity with rise in socioeconomic burden.<sup>2</sup> Two hundred million women are estimated to be affected with osteoporosis worldwide and around one-tenth of female aged 40 years.<sup>3</sup>

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In neighbored country, one out of three female presents with osteoporosis, making the country as one of the biggest affected country in the world.<sup>4</sup> The osteoporotic fractures are responsible for morbidity and impaired the daily life activities. It is a silent disease and is presented as low bone density, till fracture occurs and leads to increased burden of fractures annually worldwide.<sup>5</sup> Till yet, osteoporosis considered as under recognized disorder & labeled to be morbid ageing consequence. The perceptions have been altered and awareness has been seen since studies highlights the disease burden on health care organizations, hospitals and the adverse events faced by millions of individuals worldwide.<sup>6</sup> During past decades, there had been major improvements in diagnostic tools & evaluation facilities; it is now convenient to identify the disorder before the fractures occurs.<sup>7</sup> Thus, the rationale is to screen and detect this medical disease at an early stage, so can have early intervention and management which leads to reduction in morbidity, morbidity and permanent disability. Therefore, the present study was conducted on female population of age  $\geq 40$  years presented at Liaquat University Hospital Hyderabad / Jamshoro.

## MATERIALS AND METHODS

The cross sectional study was conducted at Liaquat University Hospital, Hyderabad / Jamshoro during January 2018 to April 2018 on the women aged  $\geq 40$  years while the exclusion criteria were patients already on treatment of osteoporosis, known cases of connective tissue disorders (RA / SLE), and already on corticosteroids and immunosuppressive therapy. All the relevant females were explored for osteoporosis by taking detail clinical history, specific physical examination and along with baseline investigations the bone mineral density was determined through DEXA-BMD (dual energy x- ray absorptiometry) machine. The procedure is non-invasive and subjects with T- score less than -2.5 were considered as osteoporotic, the score between -2.5 & -1 was considered as osteopenic and the score  $> -1$  were taken as normal. It is the most reliable tool to diagnose osteoporosis and osteopenia. The proforma was designed for proper data collection while analyzed in SPSS 21. The descriptive statistics was used to describe the data and present the study results.

## RESULTS

**Table No. I: The clinical and demographical profile**

Parameter	Frequency (N=50)	Percentage (%)
<b>AGE (yrs)</b>		
40-49	05	10
50-59	08	16
60-69	12	24
70-79	14	28
80+	11	22
<b>DIABETES MELLITUS</b>		
Yes	22	44
No	28	36
<b>RESIDENCE</b>		
Urban	20	40
Rural	30	60
<b>EDUCATION</b>		
Primary	05	10
Middle school	07	14
Higher secondary	04	8.0
Graduate	07	14
Illiterate	27	54
<b>HYPERTENSION</b>		
Yes	22	44
No	28	56
<b>SOCIO-ECONOMIC</b>		
Upper class	10	20
Lower class	40	80
<b>BMD</b>		
Osteoporosis	28	56
Osteopenia	10	20
Normal	12	24

During six months study period total fifty patients having age  $\geq 40$  year were recruited and studied had mean age  $\pm$  SD identified as  $58.51 \pm 7.71$  (yrs). The demographical and clinical profile of study population is presented in Table I.

## DISCUSSION

Osteoporosis makes the bones weak and fragile. It is a silent disease and is reflected by low bone density, till a fracture occurs. In women during peri-menopausal period and menopause there is maximum bone loss and as the age increases the prevalence of osteoporosis also increases.<sup>8-10</sup>

In present series, the mean age of the study subjects was  $58.51 \pm 7.71$  yrs. This is supported by study conducted by Vaasanthi PA et al, 252(63%) were in the age group of 40-49 years with the mean age of 50.91.<sup>11,12</sup> In the study by Vaasanthi PA, et. al 80.1% had attained menopause and 114.7% were still menstruating and among them 53.07% had attained menopause at the age of 40-45 years.<sup>12</sup> In current study majority of the study subjects 54% were illiterate, 14% had studied up to middle school, similar finding was observed Ayesha et al study where 36% were illiterate.<sup>13</sup> In a study done by Das BG, et al in 2016, 66 % of females belonging to lower socio-economic scale.<sup>14</sup> The mean BMI was  $26.92 + 7.74$  years. In a study done by Lan-Juan Zhao, et al shown no any association of body fat on bone mass.<sup>15</sup> The cross sectional survey on osteoporosis among women conducted by Agrawal T, et al was observed that 38.6% of ladies were normal according to WHO T score criteria while the 48.1% had osteopenia whereas 13.3% had osteoporosis.<sup>16</sup> Since the awareness was poor among the study population, thus the health education regarding the risk factor and benefits of exercise, foods rich in calcium and vitamin D and benefits of sun exposure, prevention, treatment and early screening tests should be initialized in multidisciplinary pattern.

## CONCLUSION

The osteoporosis is a silent disorder reflected as low bone density and ultimately leads to fractures. In women during peri menopausal period and menopause there is maximum demineralization while the disease is directly proportional to advance age.

### Author's Contribution:

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**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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