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OSTEOPOROSIS;
PREVALENCE AMONG THE POST MENOPAUSAL WOMEN

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ABSTRACT... **Objectives:** To Study the prevalence of osteoporosis among post menopausal women in the Faisalabad city and compare that with other developed and developing countries. **Study Design:** A Cross Sectional Study. **Place and Duration of Study:** Medina Teaching Hospital Faisalabad and Al Bari Hospital Faisalabad from February 2008 to April 2008. **Patients and Methods:** A total of 300 post menopausal women were included after valid consent and observing inclusion and exclusion criteria. Quantitative Ultrasound Device (QUO) that is BMD was assessed from the heel of each participant. T-Scores were obtained and WHO classification was followed. A scale was used to assess the Body Mass Index measuring height and weight. Data collection sheet having structured questions was used for checklist for obtaining pertinent information. **Results:** Out of 300 post menopausal women overall prevalence of Osteoporosis (OP) was 20%. Further, 44% were Osteopenic. Results were comparable with other countries as well. **Conclusion:** Osteoporosis (OP) is not uncommon in our country. It should be considered as a Public Health Problem. Early screening and prompt treatment can prevent the heavy cost on fracture managements. In Pakistan, even in Asia Key data is not available to convince Policy makers that OP is a serious burden on population and to invest in prevention is the better option. Health Education is imperative for target population.

Key words: Osteoporosis, Post menopausal women, Prevalence, Faisalabad.

INTRODUCTION

Osteoporosis (OP) is a systemic disease characterized by low bone mass and micro architectural deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture. Osteoporotic bone changes are initially silent and can progress undetected until a low trauma fracture occurs[1]. At any given age, bone mass results from the amount of bone acquired during growth. The attainment of a higher peak bone density in the growing years has an important role in the prevention of osteoporosis later in life[2].

According to the World Health Organization diagnostic classification, BMD (Bone Mineral Density) is expressed as "T-Scores," the number of standard deviations (SD) above or below average in young normal adults (see Table-I).

METHODOLOGY

A) SETTING

The measurement of BMD was conducted at Medina Teaching Hospital (Hospital affiliated with University Medical College) & Al Bari Hospital Faisalabad, Pakistan respectively.

Valid consent was taken from each participant and ethical issues were considered.

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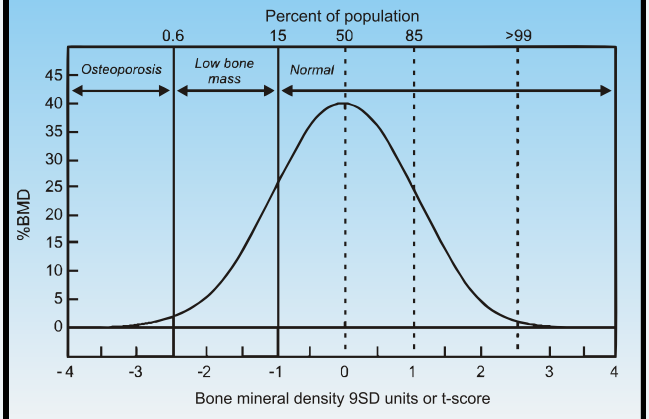
Table-I. WHO osteoporosis diagnostic classification	
Diagnosis	**T-score**
Normal bone mass	T-score no lower than -1 SD
Osteopenia	T-score between -1 and -2.5SD
Osteoporosis	T-score equal to or more than -2.5SD

Fig-1. Distribution of bone mineral density in young healthy female population



Non-modifiable risk factors	Modifiable risk factors
Caucasian race	Inadequate nutrition (prolonged)
History of adult fracture	Estrogen deficiency
Family history of fractures	Impaired vision
Advances age	Alcoholism
Female gender	Recurrent falls
Poor health (fertility)	Inadequate exercise
Dementia	Smoking

B) SUBJECTS

Inclusion Criteria

Post Menopausal women

Exclusion Criteria

1. Males
2. Pregnant females
3. Lactating mothers (Breast-feeding)
4. Females previously diagnosed with osteoporosis

C) SAMPLE SIZE

Sample size was 300 post menopausal ladies (mean age 56 years) fulfilling inclusion criteria.

DL STUDY DESIGN

A Cross - Sectional study

E) METHODS OF MEASUREMENT

1) Quantitative Ultrasound Device (QUD) to find the T-score for each participant. BMD (g/cm2) of the calcaneous heel was estimated. Estimates the bone mineral density from the quantitative ultrasound index (QUI) and compares it to that of young, health, sex-matched subjects to produce a T-score. The T-score is widely used to assist in the interpretation of BMD results. It measures in units of the population standard deviation.

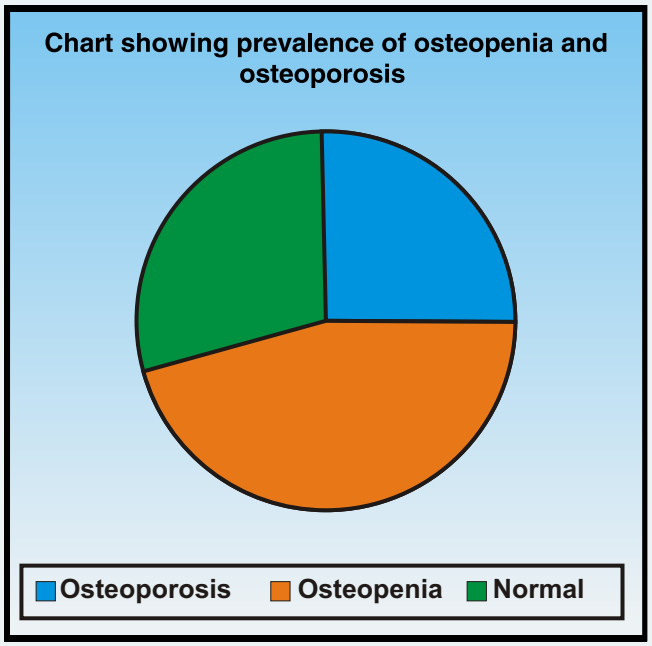
2) The second instrument used was a scale to measure the weight and height of the entrants. This enabled us. to accurately calculate the body mass index (BMI).

3) Data collection sheet, via a structured interview was used as a checklist for obtaining the pertinent information regarding participant's demographic information, reproductive history, medication use in the past twelve months, family history of osteoporosis and lifestyle. The lifestyle information asked about included dietary calcium intake, tobacco use, exposure to sun, and physical activity. Skin exposure to sunlight was determined from the participants reported length of time as minutes per day. Level of physical activity was determined on the basis of whether the participant walks for exercise, climbs stairs, walks carrying loads at least once per day, or any other exercise activity at least once per week.

RESULTS & DISCUSSION

In our study, out of 300 post menopausal females, overall

prevalence of Osteoporosis was 20%. Further, the prevalence of Osteopenia was 44%. Alternatively, 36% were in normal range.



This result correlates with the study conducted in India in 2005, where prevalence of Osteoporosis was 29% and Osteopenia was 52% Moreover, more than 34% US women above the age of 50 have osteopenia and 17 to 20% have Osteoporosis[3].

El - Desouki M (1989-1999) conducted a similar study to estimate prevalence of Osteopenia and Osteoporosis in 830 postmenopausal Saudi women with average age of 59 years.

He concluded that osteoporosis (39.5%) and Osteopenia (30.6%) are common among postmenopausal Saudi women, and that osteoporosis should be considered a matter of public health. Gahnnan et al has concluded that BMD in healthy Saudi individuals is significantly lower than in their USA counterparts. Their speculation was that this may be due in part to increased number of pregnancies and longer duration of lactation together with prevalent vitamin D deficiency[4]. It was concluded that 15.7% of the women were classified as having Osteopenia. In this study participants with Osteopenia were more likely to have a later onset of menarche, irregular menstrual periods (P=0.035), lower body mass index (P=0.01) and a positive family history of osteoporosis than those with normal BMD[5].

A study was conducted by Shilbayeh between 2000 to 2002, to study the prevalence of Osteoporosis and its reproductive risk factors among Jordanian women. According to WHO criteria, 29.6% were identified as having Osteoporosis 43.8% with Osteopenia, and 26.6% had normal BMD. The evidence concerning association of multiple pregnancies, lactations, and other menstrual histories remains inconclusive[6].

CONCLUSION

In Asia, as in many other of the world, there is a lack of key data needed to convince policymakers that osteoporosis is a serious burden on the population and that it makes sense to invest in prevention measures. There is need to conduct more research in this area. Morbidity due to OP is major financial drain on the resources of the affected family and government as well. In USA direct cause of hip fracture was around US$ 13.1 billion in 1995 (54). In Australia it is A $ 44 million / million of population per annum[7].

It can be concluded that osteoporosis (OP) is not uncommon in post menopausal women. Further, if female is screened at younger age before menopause osteopenia and subsequently osteoporosis can be prevented by life style modification, exercise and balanced diet[8,9,10,11,12]. However, if OP is diagnosed, treatment must be initiated as soon as possible to prevent fractures. Proper counseling about OP and family planning services can help to address the issue of short birth intervals. Those who have been diagnosed must take the treatment for specified time period. Moreover, Health Education is essential to address the issue of OP.

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