



# The Diagnosis Of Osteoporosis Among Subjects Of Southern Indian Origin Above 50 Years Of Age



## The Impact Of The Indian Council Of Medical Research Versus Caucasian Bone Mineral Density Reference Standards

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**INTRODUCTION:** In the year 2010, the Indian Council of Medical Research (ICMR) has published a normative data for Bone Mineral Density (BMD) measured by Dual Energy X-ray Absorptiometry (DXA) scanning. However, its impact on the diagnosis of osteoporosis when compared to currently used Caucasian database has not been analysed.

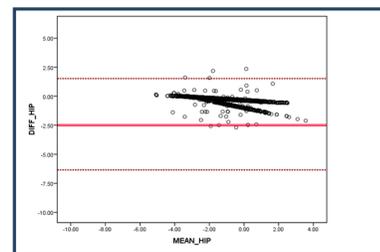
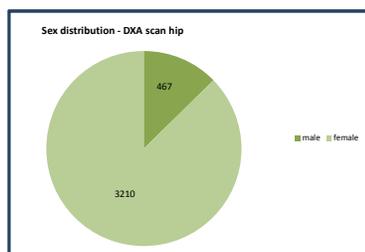
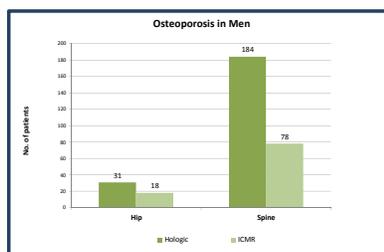
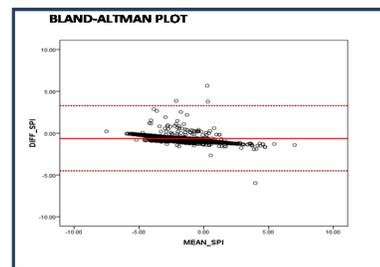
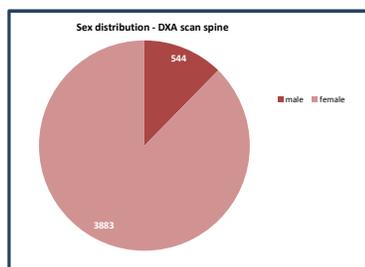
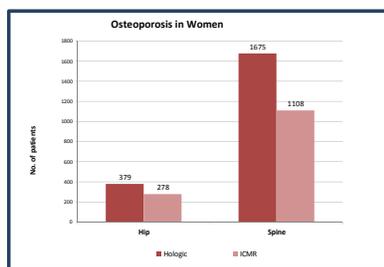
**OBJECTIVES:** To study the effect of the newly generated ICMR database (ICMRD) on the diagnosis of osteoporosis (using T-scores) compared with the Hologic DXA-4500 series database (HD) in subjects above the age of 50 in a Tertiary care centre from South India.

**METHODS:** A cross sectional study of DXA scan performed between January 2009 and December 2011 was done. The reference standards of the BMD obtained in the ICMR study for the hip and spine were used to recalculate the T-scores, and their agreement with the HD in the diagnosis of osteoporosis was ascertained.

### RESULTS

A DXA scan of the lumbar spine in 4427 subjects (M: F=544:3883) and hip in 3,677 subjects (M:F=467:3210) were analysed. The mean age of the subjects was  $61.3 \pm 8.4$  and  $59.7 \pm 7.5$  years in males and females respectively. Osteoporosis at the spine and hip were diagnosed in 1859(42.7%) and 404(11.4%) subjects by HD and in 1186(27.7%) and 296(8.3%) subjects by ICMRD respectively.

A significant agreement existed between the two reference databases for the diagnosis of osteoporosis at the spine ( $k=0.657$ ;  $P<0.001$ ) and hip ( $k=0.808$ ;  $P<0.001$ ). A greater proportion were diagnosed as having osteoporosis with HD over ICMRD (at the lumbar spine by 35.1% and hip by 27.1%).



**CONCLUSION:** Though a larger proportion of subjects were diagnosed with osteoporosis using HD over ICMRD at both sites, there was a significant agreement between the two methods for the diagnosis.

However, further studies are required to denote as to whether a similar degree of agreement exists for the diagnosis of osteoporosis in those subjects with fractures.