

Bone Mineral Density In Iranian Patients

Effects of Age, Sex, and Body Mass Index



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Introduction: Osteoporosis is a multifactorial skeletal disease that is characterized by reduced bone mineral density (BMD). BMD values depend on several factors such as age, sex and age at menopause. The purpose of this study was to determine the prevalence and changes in bone mineral density in Iranian patients.

Methods: Three hundred patients were selected through random sampling technique in 2009. BMD was assessed by Norland machine at the lumbar and femoral neck. Weight and height were measured through standard methods. A thorough history was taken from each patient. The data was analyzed using SPSS software version 13.0. P-values less than 0.05 were considered statistically significant.

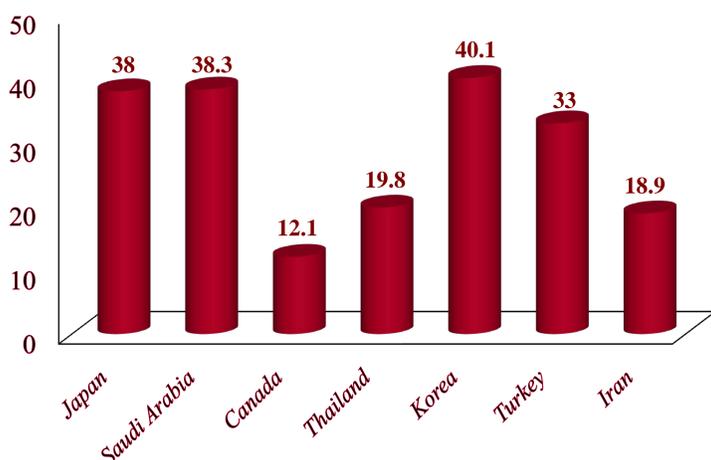


Chart 1. Prevalence of lumbar spine osteoporosis in different places of the world

Table 1. Prevalence of osteoporosis and BMD status according to the age groups at both lumbar spine and femoral neck.

Age Groups	Osteoporosis lumbar femur number (%)	Osteopeni lumbar femur number (%)	Normal lumbar femur number (%)
Less Than 29	2 (10)	5 (25)	13 (65)
	2 (10)	9 (45)	9 (45)
30-39	2 (7.5)	7 (25)	19 (67.9)
	2 (7.1)	13 (46.4)	13 (46.4)
40-49	1 (1.7)	14 (23.3)	45 (75)
	4 (7.6)	22 (36.7)	34 (56.7)
50-59	15 (15.8)	41 (43.2)	39 (41.1)
	31 (32.6)	44 (46.3)	20 (21.1)
60-69	17 (28.3)	33 (55)	10 (16.7)
	32 (53.3)	20 (33)	8 (13.3)
More than 70	13 (35.1)	21 (56.8)	3 (8.1)
	30 (81.1)	7 (18.9)	0

Results: From among the 300 studied patients, 86.6% were female. Their mean age was 52.7 years. Their average body mass index (BMI) was 28.14 kg/m². Mean T-Score at lumbar spine and femoral neck was -1.07 ± 1.19 and -1.75 ± 1.33 respectively. Mean BMD value at lumbar spine and femoral neck was 0.92 ± 0.19 and 0.77 ± 0.16 respectively. The prevalence of osteoporosis at lumbar spine and femoral neck was 33.7% and 16.7, respectively. There was a significant correlation between age, BMI and BMD values (P-Value < 0.01). Correlation between gender and BMD value at the lumbar spine and femoral neck was not significant.

Conclusion: This study shows that ageing and low BMI are risk factors associated with bone loss. It is recommended to measure BMD and implement prevention programs for high-risk people.