

Bone mineral density in hemophiliac patients

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OBJECTIVES

Patients with hemophilia have several risk factors for reduced bone mineral density (BMD) including arthropathy and resulting immobility. Recent studies have shown variable frequency of low BMD in this group of patients. We conduct this study to assess prevalence of low BMD (osteoporosis and osteopenia) and associated risk factors.

METHODS

Patients with moderate or severe hemophilia A underwent BMD measurement by dual energy X-ray absorptiometry in the Imam Khomeini hemophilia center at Tehran. BMD results were correlated with other variables including physical activity, calcium intake and demographic data.

Table 1: Demographic and bone mineral density data of 42 hemophilia patients.

	mean± SD (range)
Age (year)	31.1±12.4 (18-72)
Weight (kg)	64.9±9.84 (45-85)
Height (cm)	170.36±8.57(150-187)
Body mass index (kg/m ²)	22.4 ± 2.9 (17.2-27.1)
BMD total spine (g/cm ²)	0.90±0.17 (0.45-1.20)
BMD left hip neck	0.83±0.20(0.38-1.44)
BMD left hip total	0.89±0.16(0.53-1.14)
BMD right hip neck	0.83±0.19(0.52-1.26)

Table 2: number and percentage of Osteopenia and Osteoporosis at different locations of 42 hemophilia patients (T-scores and according to WHO criteria).a

Osteopenia total spine	19/42 (45.2%) (95% CI: 30.2 – 60.3%)
Osteopenia left hip neck	13/42 (31%) (95% CI: 17 – 44.9%)
Osteopenia right hip neck	15/42 (35.7%) (95% CI: 21.2 – 50.2%)
Osteoporosis total spine	10/42 (23.8%) (95% CI: 10.9 – 36.7%)
Osteoporosis left hip neck	6/42 (14.3%) (95% CI: 3.7 – 24.9%)
Osteoporosis right hip neck	5/42 (11.9%) (95% CI: 2.1 – 21.7%)

RESULTS

Forty two patients with mean age 31 years (range 18-72) completed the study. The prevalence of osteoporosis in spine and left femoral neck were 23.8% and 14.6% by world health organization T-score criteria; osteopenia in spine and femoral neck were seen in 45.2% and 31.7% respectively. We found only cigarette smoking to be significantly related to reduced BMD (P=0.00). We had two cases of pathologic fracture at femoral neck and forearm (2/42, 4.8%).

CONCLUSIONS

Reduced BMD is very common in patients with hemophilia. Appropriate assessment of BMD in this group and control of predisposing factors such as prophylactic factor replacement to prevent hemarthrosis and cessation of cigarette smoking is warranted.

References

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