

Does testosterone have an effect on bone mineral density in postmenopausal women?

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Abstract

Background: Osteoporosis is a common problem in postmenopausal women. There is limited data about the physiological importance of endogenous testosterone (T) on bone mineral density (BMD) in older women is poorly understood.

Aim: The aim of this study was to evaluate association of endogeneous T with BMD and body mass index(BMI).

Materials-methods: This cross-sectional study included 64 patients (45-85 year) postmenopausal women; their demographic features, BMD and serum total testosterone levels and relationship between T and BMD were evaluated. When the patients divided into three cathegories according to BMD; Group 1A: normal; Group 1B:osteopenic; Group 1C:osteoporotic (Table 1)

Results: Serum total testosterone levels were found not to be correlated with BMD. We didn't find any differences in serum testosterone levels between three BMD groups.

Conclusion: This study suggests that endogenous androgens are influential on bone density in postmenopausal women. However, we didn't find any relationship. Effects of endogenous testosterone level on BMD is controversial.

Table 1. Demographic parameters and laboratory results of three groups.

	Group 1A (n=22)	Group 1B (n=21)	Group 1C (n=21)	P-value
Age (years)	54±6.3	56±7.9	58±1.0	0.058
Menopausal age	46±4.0	44±5.4	43±6.6	0.131
Height (cm)	158±6.2	1.58±4.9	155±6,1	0.304
Weight (kg)	75±13.4	71±15.0	68±12.5	0.383
BMI (kg/m ²)	30.5±5.1	28±5.3	27.6±4.3	0.450
Calcium (mg/dl)	9.45±0.56	9.40±0.42	9.40±0.57	0.984
Phosphorus (mg/dl)	3.7±0.79	3.6±0.59	3.5±0.48	0.684
Albumin (g/dL)	4.4±0.31	4.3±0.40	3.5±0.48	0.933
PTH (pg/mL)	55.1±2.98	60±3.5	43.6±1.37	0.045
25-OH D vit (μ/L)	21.5±16.3	24.8±13.8	23.7±14.2	0.986
Testosterone (ng/dL)	38.6±20.2	27.1±14.7	28.6±19.2	0.712