

Clinical Efficacy Of Calcium And Vitamin D Therapy In Residents With Osteoporosis : An Analysis At A Nursing Home In Central Taiwan

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Introduction

Osteoporosis becomes an important medical and public health issue as the population gets older. Osteoporotic fractures are a common and serious health problem for older adults living in nursing homes. Calcium and/or vitamin D supplements have been used for the prevention and treatment of osteoporosis. Our primary objective was to describe the prevalence of osteoporosis diagnosis in nursing home residents. Secondary objectives included assessment of pharmacologic therapies and risk of fracture in a nursing home with osteoporosis, as well as differentiating clinical characteristics of treated versus untreated male and female nursing home with osteoporosis.

110 the elders

35% Men

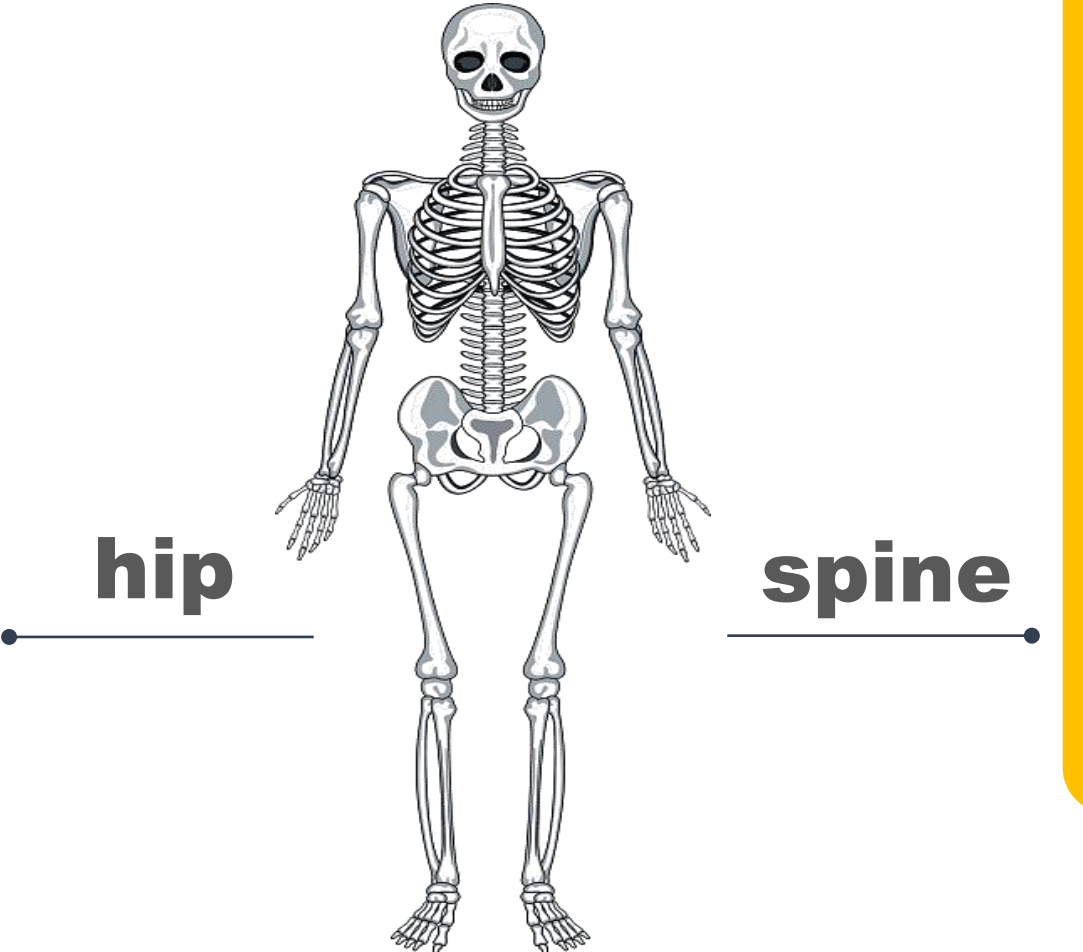
Women

65%



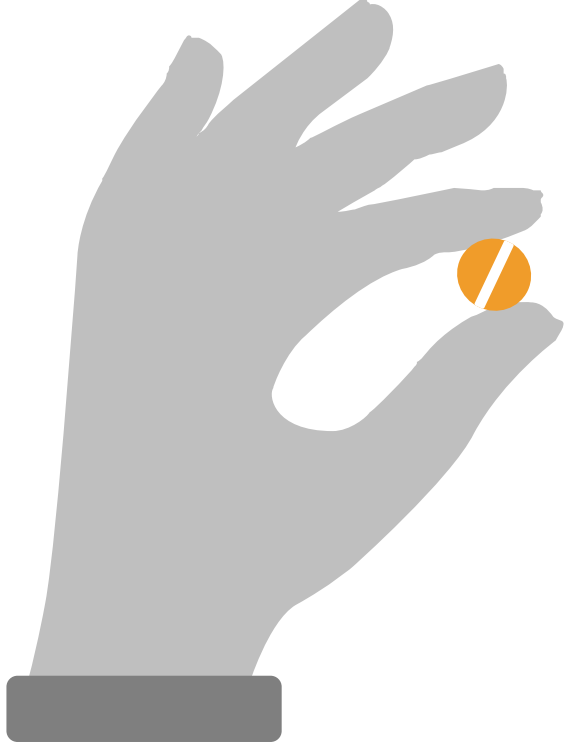
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Dual energy X-ray Absorptiometry,
DEXA



2

1,000mg Ca
800 IU Vit D



3

Bone Mass Density
1 year follow up



4

Baseline characteristics

	Male (N=39)	Female (N=71)	Total (N=110)
Age (mean, SD)	79.5±8.8	81.5±7.8	80.8±8.2
BMI (mean, SD)	22.0±3.6	22.7±3.9	22.5±3.8
10 Year Major Osteoporosis Fracture Risk (% FRAX)	12.3±8.7%	21.1±6.8%	18.0±8.6%
Bone Mineral Density (gm/cm ²)			
-Spine	0.94±0.18	0.75±0.13	0.81±0.18
-Total hip	0.71±0.19	0.54±0.15	0.60±0.18
-Femoral neck	0.56±0.17	0.43±0.13	0.48±0.16
BMD Osteoporosis Classification (%)	19(51.4%)	56(86.2%)	75(73.5%)

Bone mineral density after therapy

	Baseline	1 year follow-up	P-value
Total (N=59)			
Spine	0.82±0.18	0.85±0.18	<0.001
Total hip	0.59±0.16	0.61±0.18	0.009
Sex			
-Female(N=40)			
Spine	0.74±0.12	0.78±0.13	<0.001
Total hip	0.54±0.14	0.57±0.17	0.011
-Male(N=19)			
Spine	0.99±0.18	1.01±0.19	0.008
Total hip	0.69±0.17	0.71±0.17	0.260
Age			
-Age>=80yrs(N=36)			
Spine	0.81±0.20	0.84±0.20	<0.001
Total hip	0.61±0.17	0.63±0.19	0.039
-Age<80yrs(N=23)			
Spine	0.82±0.14	0.86±0.15	0.001
Total hip	0.57±0.15	0.59±0.18	0.064

Conclusion

There is substantial variation in the quality of osteoporosis treatment across nursing homes. Research suggests that the risk factors for fractures in groups with the elders should be avoided, and the monitoring of bone density, physical activity and health status should be strengthened, and the duration of sunshine should be appropriately increased. These health promotion activities can be promoted by institutions to care for this group of bone health and prevention of osteoporosis, thereby avoiding the occurrence of fractures. According to related treatment guidelines, early identification of those at higher fracture risk and timely preventive or therapeutic intervention may help decrease the risk of osteoporotic fractures.