

# ARE SECONDARY OSTEOPOROSIS RISK FACTORS COMMON IN OLDER ADULTS ADMITTED WITH ACUTE HIP FRACTURES?

M PRADEEP<sup>1</sup>, S RYAN NICHOLAS<sup>1</sup> WT. OOI<sup>2</sup>, AV. LEE<sup>2</sup>, C.S TAN<sup>1</sup>, W.C LIM<sup>2</sup>, S JASVINDAR<sup>1</sup>

<sup>1</sup>ORTHOPAEDIC DEPARTMENT, TAIPING HOSPITAL.

<sup>2</sup>MEDICAL DEPARTMENT, TAIPING HOSPITAL

## INTRODUCTION:

Secondary osteoporosis is a reduction in bone mass that occurs in the presence of underlying medical conditions. In this study, we explore the prevalence of secondary osteoporosis in acute hip fractures.

## METHODS:

This was a retrospective observational study involving patients aged 60 years old and above admitted to our ward with acute hip fractures from May to December 2021. Data collected included patient demographics and secondary osteoporosis risk factors: renal function, thyroid function test (TFT), calcium level, and Vitamin D levels.

## RESULTS:

A total of 124 patients with a mean age of 76.8±8.1 years old were included. Seventy-seven (62.1%) of the patients were female. Vitamin D insufficiency (30-50nmol/L) and deficiency (<30nmol/L) was the most prevalent secondary osteoporosis risk factor (61.9%) [Table 1], followed by hypocalcemia (12.1%), chronic kidney disease stage ≥4 (11.3%), hypercalcemia (7.1%), and deranged thyroid function test (5.7%). The mean vitamin D level was 48.2±25.4nmol/L. Females had a significantly lower mean vitamin D level (39.3±18.3nmol/L) compared to males (64.3±28.7nmol/L), p<0.001. Malay patients had significantly lower mean vitamin D level (38.8±20.1nmol/L), compared to Chinese patients (62.8±28.8nmol/L), p<0.001.

	Overall	Male	Female
Deficient	19 (22.6%)	3 (10.0%)	16 (29.6%)
Insufficient	33 (39.3%)	8 (26.7%)	25 (46.3%)
Sufficient	32 (38.1%)	19 (63.3%)	13 (24.1%)

Table 1: Proportion of patients with vitamin D deficiency and insufficiency by gender

## DISCUSSIONS:

Studies have suggested that high serum vitamin D level is associated with a reduced hip fracture risk [1]. Given how prevalent vitamin D deficiency/insufficiency is in older patients with hip fractures, we propose a prospective study to explore the role of Vitamin D supplementation in secondary prevention of hip fracture.

## CONCLUSION:

Vitamin D insufficiency/deficiency is common in older adults admitted with acute hip fractures.

## REFERENCES:

1. Wang N, Chen Y, Ji J, Chang J, Yu S, Yu B. The relationship between serum vitamin D and fracture risk in the elderly: a meta-analysis. Journal of Orthopedic Surgery and Research.2020;15(1).