

Bone health among older persons in medical clinic: A clinical audit

Cheng lay Teh, MD, MRCP, Seow Lin Chuah, MBBS, MRCP, Hong Khoh Lee, MBBS MRCP, Sharifah Aishah binti Wan Mohd Akbar, MBBS MRCP, Tze Shin Leong, MBBS MRCP, Florence Hui Sieng Tan, MBBS MRCP, Bik Kui Lau, MD MRCP

¹Rheumatology Unit, Department of Medicine, Sarawak General Hospital, Kuching, Sarawak, Malaysia, ²Timberland Medical Centre, Kuching, Sarawak, Malaysia, ³Endocrine Unit, Department of Medicine, Sarawak General Hospital, Sarawak, Malaysia

SUMMARY

Osteoporosis is commonly underdiagnosed and undertreated. We performed a clinical audit to assess the risk factors and clinical care for osteoporosis among older persons who attended medical clinic during a 4-week period in August 2013. There was a total of 128 patients with a mean age of 73.1±5.8 years, and 20.3% had a history of fall. Fracture Risk Assessment Tool (FRAX) scores assessment showed 14.2% and 68.8% had a 10-year risk of major osteoporotic and hip fractures respectively. Only 6.3% underwent Dual-energy X-ray absorptiometry (DXA) and 73.4% did not receive any preventive treatment for osteoporosis. Older persons attending medical clinic at high risk of osteoporosis fractures did not receive appropriate screening and treatment. There is a need to improve the suboptimal care for bone health among older persons.

KEY WORDS:

osteoporosis risk assessment, FRAX, fractures

INTRODUCTION

Osteoporosis is defined by the National Institutes of Health (NIH) as a skeletal disease characterised by low bone mass and disintegration of bone microarchitecture, leading to bone fragility and ultimately fracture. In the coming decades, the high burden of osteoporosis and its cost to society and health care system will become a major health challenge.¹ Osteoporosis is underdiagnosed and undertreated worldwide and gaps in osteoporosis prevention and treatment have been reported.²

MATERIALS AND METHODS

We performed a clinical audit to assess osteoporosis risks factors and clinical care among older persons in a medical clinic at the Sarawak General Hospital, Kuching. This was a retrospective case notes review on all older persons (women >65 years and men >70 years) who attended the medical clinic during a 4-week period in August 2013. Data collected included demographics, comorbidities, risk factors for osteoporosis and history of falls in the past one year. The history of Dual-energy X-ray absorptiometry (DXA) done among the patients were also recorded. Osteoporosis risk assessment were performed using Osteoporosis Self-Assessment Tool for Asians (OSTA) score³. and Fracture Risk

Assessment Tool (FRAX).⁴ Treatment for osteoporosis was assessed as well. Analysis was performed using SPSS version 19.0. Results are presented as frequencies and percentages for categorical variables and as means and standard deviation (SD) for continuous variables.

RESULTS

There was a total of 128 patients mainly females (68.8%). Our patients were from multi-ethnic origin with predominantly being Chinese (64.1%) and their mean age was 73.1±5.8 years. Osteoporosis risk assessment showed that 14.1% of them had history of fracture in the past one year, whereby fracture rate of women was more than 2 folds compared to men (17% vs 7.5 %). Secondary OP was present in 10.2% of patients (hyperthyroidism was present in 4 patients). Only 8.6% of patients have rheumatoid arthritis. There was glucocorticoid usage of equivalence to prednisolone 5mg daily (>3 months) in 5.5% of our patients. Family history of fractures was reported in 3.9% of patients. Only 0.8% of patients were smokers and none of our patients consumed alcohol. There was a history of fall in 20.3% of the patients.

Our patients had a median FRAX score of 10-year risk of major osteoporotic fractures 9.8% (IQR=8.1%) and hip fractures 4.1% (IQR=4.4%). We defined high risk for osteoporosis fractures as 20% 10-year risk for major osteoporosis fractures and 3% 10-year risk for hip fractures. Based on the FRAX scores of patients, 14.2% of patients were at high risk for major osteoporotic fractures and 68.8% were at high risk for hip fractures. Based on OSTA, 51.5% were categorised as high risk of osteoporosis, 42.2% as moderate risk and 6.3% as low risk. Despite this, only 6.3% of our patients (all were women) underwent DXA scan and 73.4% of patients did not receive any preventive treatment for osteoporosis. Thirteen patients received calcium and vitamin D, 10 patients received calcium and two patients received only vitamin D. Only 7 patients (all females) received a combination of calcium, vitamin D and antiresorptive treatment.

DISCUSSION

Malaysia is an ageing country. As of 2016, Malaysians aged ≥65 comprised 6% of the population. This is projected to

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Corresponding Author: Dr Cheng Lay Teh
Email: tehchenglay@yahoo.com

Table I: Characteristics of the subjects, investigations performed and treatment received

	Number of patients (%) 128(100%)
Gender	
Female	88 (68.8%)
Male	40 (31.2%)
Age, mean (SD)	73.1± 5.8
History of fall in one year	26(20.3%)
History of fracture	18(14.1%)
Parental history of fracture	5(3.9%)
Secondary osteoporosis	13(10.2%)
Glucocorticoid 5mg daily	7(5.5%)
Smoking	1(0.8%)
Alcohol	0(0%)
History of DEXA scan done	8(6.3%)
Treatment received	
a) Calcium and vitamin D	13(10.2%)
b) Calcium alone	10(7.8%)
c) Vitamin D alone	2(1.6%)
d) Combination Calcium / vitamin D plus antiresorptive agent	7(5.5%)

increase to 13.17% in 2035.⁵ Chinese women accounted for 44.8% of hip fractures and 20% of men and women die in the first year after a hip fracture.⁶ Therefore, osteoporosis will become a major public health problem in the coming decades. There is an urgent need to tackle the projected burden of osteoporosis.

Older persons were at high risk of osteoporosis as demonstrated in this current study. Up to one fifth of our patients have had falls in the past one year. Prevention of fractures should include non-pharmacological management and multidisciplinary team assessment apart from investigations for diagnosis and medical treatment alone. Despite being at risk of osteoporosis fractures, the majority did not undergo DXA scans and none of them were referred to physiotherapists or occupational therapists. This gap in osteoporosis care is most likely due to poor awareness of osteoporosis among the healthcare providers. There are extensive reports focused on the many potential strategies to prevent osteoporosis and treat established disease, but this has not necessarily been translated into clinical practice. Physician education is essential in increasing awareness of osteoporosis and appropriate initiation of treatment strategies. Several studies from different countries have pointed out the lack of awareness of osteoporosis, its risk factors and measures of prevention among healthcare providers.⁷⁻⁹ One Malaysian study showed that Primary Care Physicians with 5-10 years and >10 year experience were more likely to treat osteoporosis (p=0.013) compared to those with <5 years of working experience. Up to 63.4% of the respondents were aware of the Malaysian Clinical Practice Guidelines for the treatment of osteoporosis and made use of it in their day to day clinical practice.¹⁰

Only female patients underwent DXA scan and received combination of calcium, vitamin D and antiresorptive treatment. This discrepancy in clinical care between male and female patients is most probably due to lack of awareness of male patient developing osteoporosis among healthcare workers.

There are several unmet needs in osteoporosis in our population. There is lack of recognition of the importance of osteoporosis. Moreover, osteoporosis and bone health has not been given priority compared to other non-communicable diseases. Absence of a national structured programme to promote bone health in all age groups and a preventive programme for osteoporosis should be tackled too. Expanding the knowledge and awareness of osteoporosis is an important step to manage osteoporosis effectively with subsequent improvement of quality of life and decrease in disease burden.

In conclusion, a significant percentage of older persons attending a hospital-based medical clinic were at high risk of osteoporosis fractures but did not receive appropriate clinical care for osteoporosis. There is a need to increase the awareness of osteoporosis among health care providers to improve bone health.

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CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. The results presented in this paper have not been published previously in whole or part, except in abstract format.

AUTHORS' CONTRIBUTIONS

All authors were involved in conception or design, or analysis and interpretation of data, or both. Dr Teh and Dr Chuah were involved in drafting the article, revising it and providing intellectual content of critical importance to the work described. All authors approved the final version of the manuscript.

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