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New Survey Shows Gap in the Diagnosis and Treatment of Osteoporosis after Fragility Fractures among Post-Menopausal Women in 7 Countries in Asia

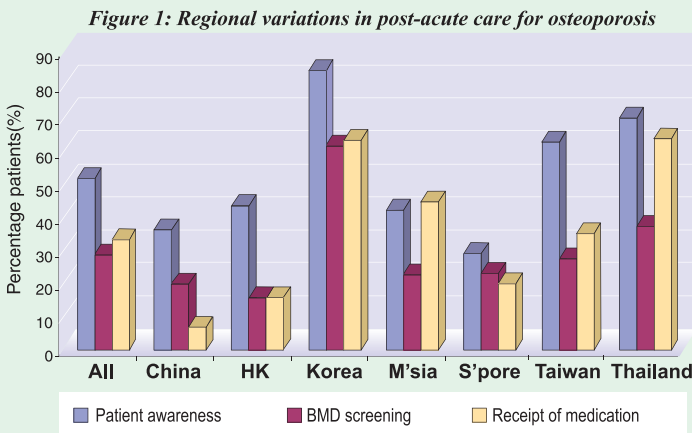
Less than 1% of patients were aware that they should take osteoporosis medications for more than 3 years. A majority of them stopped treatment because they believed that “fractures have healed”.

In this landmark study involving Hong Kong, Thailand, South Korea, China, Singapore, Malaysia and Taiwan, 1,122 post-menopausal women who were admitted to the hospital for fragility fracture between July 1, 2006 and June 30, 2007 were recruited to ascertain the awareness, screening and treatment rate of osteoporosis. Interviews were conducted face-to-face and by telephone during a 6-month period after hospitalisation. From Malaysia, the University Malaya Medical Centre (UMMC), Kuala Lumpur and Hospital University Science Malaysia (HUSM), Kelantan contributed data reflecting both urban and rural treatment practices of fragility fractures in post-menopausal women.

The following results were presented at the 1st Scientific Meeting of the Asian Federation of Osteoporosis Societies (AFOS) in Guangzhou, China on the 13th November 2009. AFOS, founded in May 2007, is an organisation dedicated in bringing the highest quality of healthcare in osteoporosis via education and research to the Asian region. Dr Lee Joon Kiong, vice president of the Malaysian Osteoporosis Society and council member of AFOS shares with us some insight from the findings.

Fragility fracture is a debilitating outcome of osteoporosis sustained due to fall from a standing height or less. As the density and quality of skeletal architecture diminish with age, the more vulnerable the person is to low-trauma fractures. A 10% loss of bone mass in the vertebrae increases the risk of vertebral fractures by two-folds, and similarly, a 10% loss of bone mass in the hip confers 2.5 times greater risk of hip fracture.¹ It is estimated that 30-50% of women and 15-30% of men will suffer a fracture related to osteoporosis in their lifetime.²

A major disparity apparent in this survey was the lack of awareness among patients and healthcare providers on osteoporosis. Of the 1,122 patients hospitalised for fragility fracture, half were aware that they had osteoporosis, 28.2% of high-risk patients ever had bone mineral density (BMD) screening and only 33% received medication for osteoporosis. About 80% of the prescribed medications were bisphosphonates, the most frequently used being alendronate. The most frequently used non-bisphosphonate therapy was calcitonin. The figure below illustrates the regional variations of post-acute osteoporosis care in Asian countries (Figure 1).



Age, fracture history and payment type were analysed for factors associated with osteoporosis awareness, BMD screening and prescription of medication. Fracture patients below the age of 50 were found to have the lowest rate of awareness (17.1%, p<0.009) and none received osteoporosis medication (0%, p<0.001). Having BMD screening was the most important predictor of osteoporosis awareness. A history of previous fracture did not appear affect osteoporosis awareness after adjusting for age and BMD screening. Patients with any type of social or private insurance were more likely to receive BMD screening compared to self-paying patients. This may reflect the general mindset of patients towards preventive care and the reluctance of paying for it.

Patient knowledge and beliefs on osteoporosis influenced treatment continuity. Less than 1% of patients were aware that they should take osteoporosis medications for more than 3 years. A majority of them stopped treatment because they believed that “fractures have healed”, or “doctors had told them to stop taking medication”. Nevertheless, most patients realised the importance of calcium in preventing osteoporosis, were willing to follow the guidance of physicians and acknowledged the importance of taking prescription medications.

BMD measurement was the main driver of osteoporosis diagnosis and treatment decisions for women after fragility fractures. Fracture history was the strongest predictor for recurrent fractures for Asian women and its significance should be emphasised in osteoporosis care, stressed Dr Lee. Patients with a history of fragility fracture are indicated for BMD measurement. Where BMD testing is unavailable, treatment can still be initiated based on cumulative risk factors such as age, bone mass index, radiological evidence of osteopenia and/or vertebral deformity, glucocorticoid therapy, concomitant medical diseases associated with osteoporosis.³

Simple risk assessment tools such as the Osteoporosis Self-Assessment Tool for Asians (Figure 2)⁴ and the International Osteoporosis Foundation One-Minute Osteoporosis Risk Test (Figure 3)⁵ are useful in identifying at-risk patients in need of further BMD measurement with dual energy x-ray absorptiometry (DXA).

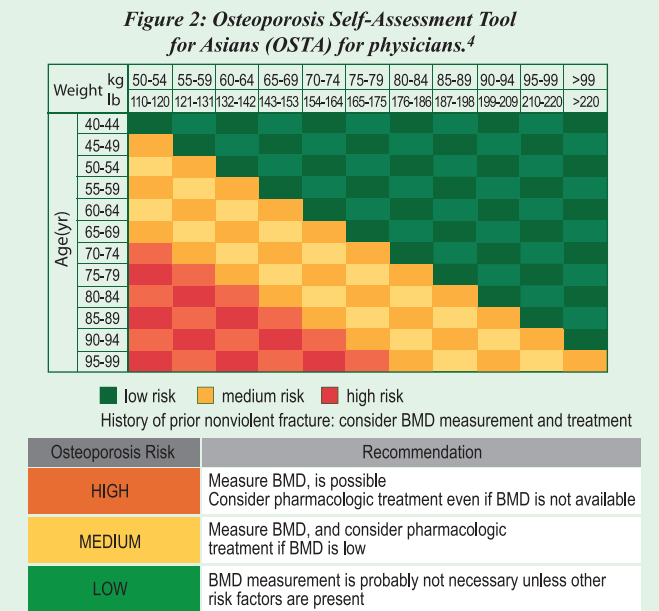


Figure 3: The New IOF One-Minute Osteoporosis Risk Test for patients⁵

Understand the status of your bone health. What is your risk for osteoporosis?

Non-modifiable risk factors	Yes	No
1. Has either of your parents been diagnosed with osteoporosis or broken a bone after a minor fall (a fall from standing height or less)?	<input type="checkbox"/>	<input type="checkbox"/>
2. Did either of you parents have a “dowager’s hump”?	<input type="checkbox"/>	<input type="checkbox"/>
3. Are you 50 years old or older?	<input type="checkbox"/>	<input type="checkbox"/>
4. Have you ever broken a bone after a minor fall as an adult?	<input type="checkbox"/>	<input type="checkbox"/>
5. Do you fall frequently or do you (more than once in the last year) or do you have a fear of falling because you are frail?	<input type="checkbox"/>	<input type="checkbox"/>
6. After the age of 40, have you lost more than 3cm in height (just over 1 inch)?	<input type="checkbox"/>	<input type="checkbox"/>
7. Are you underweight (Body Mass Index less than 19 kg/m ²)? See: <i>How to calculate your BMI.</i>	<input type="checkbox"/>	<input type="checkbox"/>
8. Have you ever taken corticosteroid tablets (cortisone, prednisone, etc) for more than 3 consecutive months? (Corticosteroids are often prescribed for conditions like asthma, rheumatoid arthritis, and some inflammatory diseases)?	<input type="checkbox"/>	<input type="checkbox"/>
9. Have you ever been diagnosed with rheumatoid arthritis?	<input type="checkbox"/>	<input type="checkbox"/>
10. Have you been diagnosed with hyperthyroid or hyperparathyroid disease?	<input type="checkbox"/>	<input type="checkbox"/>
For women:		
11. For women over 45: Did your menopause occur before the age of 45?	<input type="checkbox"/>	<input type="checkbox"/>
12. Have your periods ever stopped for 12 consecutive months or more (other than because of pregnancy, menopause or hysterectomy)?	<input type="checkbox"/>	<input type="checkbox"/>
13. Were your ovaries removed before age 50, without you taking hormone replacement therapy?	<input type="checkbox"/>	<input type="checkbox"/>
For men:		
14. Have you ever suffered from impotence, lack of libido or other symptoms related to low testosterone levels?	<input type="checkbox"/>	<input type="checkbox"/>

Modifiable risk factors

Modifiable risk factors	Yes	No
15. Do you regularly drink more than 2 units of alcohol a day? See: <i>How to estimate your alcohol consumption</i>	<input type="checkbox"/>	<input type="checkbox"/>
16. Do you currently, or have you ever, smoked cigarettes?	<input type="checkbox"/>	<input type="checkbox"/>
17. Is your daily level of physical activity less than 30 minutes per day (housework, gardening, walking, running etc)?	<input type="checkbox"/>	<input type="checkbox"/>
18. Do you avoid, or are you allergic to milk or dairy products, without taking any calcium supplements?	<input type="checkbox"/>	<input type="checkbox"/>
19. Do you spend less than 10 minutes per day outdoors (with part of your body exposed to sunlight) without taking vitamin D supplements?	<input type="checkbox"/>	<input type="checkbox"/>

What your answers mean

If you have answered “Yes” to any of the questions it does not mean that you have osteoporosis. Positive answers mean that you have clinically- proven risks which may lead to osteoporosis and fractures.

Please show this risk test to your doctor who may encourage you to take a Bone Mineral Density (BMD) scan and advise you on treatment, if necessary.

If you have no or few risk factors, you should still discuss with your doctor about bone health and your risks in the future. You may also discuss about osteoporosis with your family and friends, and encourage them to take this one-minute test.

How to calculate your BMI

BMI (kg/m²) = weight in kilograms / height in meters²

How to estimate your alcohol consumption

As a rough guide Units of alcohol per glass*

Beer or cider (4% alcohol): 250 ml/8.75 oz. = 1 unit

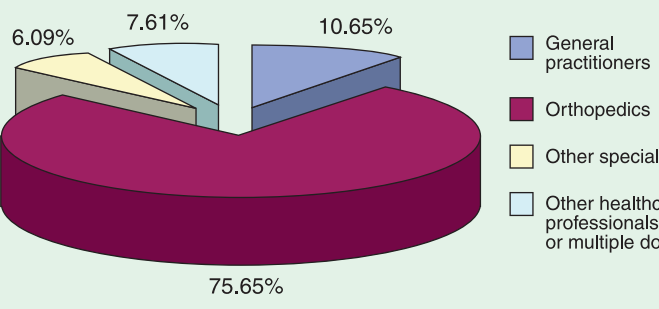
Wine (12.5% alcohol): 80 ml/2.80 oz. = 1 unit

Spirits (40% alcohol): 25 ml/0.88 oz. = 1 unit (100ml = 3.5 fluid oz.)

* Standard glasses and alcohol content in beverages vary per country, hence fluid amounts and percentages used rather than standard glasses.

In 1997, the direct cost of hospitalisation for hip fractures in Malaysia was estimated at RM 22 million. This cost, not including costs for rehabilitation and long-term nursing care, is certainly a gross underestimation and will continue to escalate if appropriate intervention is not put into place.⁶ The role of educating patients on bone health should not be restricted to specialty physicians alone (Figure 4). Dr Lee strongly advocates the approach to reducing the prevalence of osteoporosis through preventive medicine. As first-line healthcare providers in the community, general practitioners have great capacity to implement primary care measures for patients in all stages of life - from pregnant mothers to children, adolescents, adults and the elderly.

Figure 4: Specialty of physicians informing patients about osteoporosis



Osteoporosis should be acknowledged as a silent and chronic disease with great socioeconomic impact. In women over the age of 45, osteoporosis accounts for more days spent in the hospital than many other diseases, including diabetes, myocardial infarction and breast cancer.⁷ Dr Lee believes that the ultimate impetus to raising osteoporosis awareness lies in prioritising the disease at the level of national health policy planning, as it is with hypertension and diabetes. Future efforts should be made for government-supported awareness programs to reach out to the general public and general practitioners on the importance of preventing and treating osteoporosis.

Of the 1,122 patients hospitalised for fragility fracture, half were aware that they had osteoporosis, 28.2% of high-risk patients ever had bone mineral density (BMD) screening and only 33% received medication for osteoporosis.

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- 1) Prof. Dr. Chan Siew Pheng (UMMC)
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- 3) Dr Ahmad Sallehuddin Yaacob (HUSM)