INTRODUCING THE WOMEN’S HEALTH BUREAU INFORMATION FORUM

Welcome to the first edition of the Women’s Health Bureau Information Forum. The purpose of the Forum is to provide timely information on a variety of women’s health care issues in order to assist health authorities, planners, and providers in decision-making. We hope you will find the information useful and we welcome any suggestions you might have for future editions.

Why is Bone Mineral Density (BMD) Testing a Women’s Issue?

Since women, upon menopause, naturally lose bone mineral density (BMD) at a higher rate than men, women have become targets for the marketing of BMD. (However, within a few years after menopause, women and men lose BMD at the same rate).

In comparison to men, women are tested at a ratio of 17:1.

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OVERMEDICALIZATION OF WOMEN’S HEALTH - BMD TESTING

Advocates in the area of women’s health and women themselves have long been concerned about the application of the medical model of health care to certain aspects of women’s health. The medical model is the dominant approach to health care in Canada today and is based on high-technological, medical interventions centred on, but not limited to, hospitals, physicians, and the pharmaceutical industry.

Overmedicalization is a term used to describe situations where treatment interventions rely too heavily on highly technological interventions when a less invasive, aggressive approach would be of similar or greater benefit and when the medical approach is applied to situations that are not fundamentally a “treatment” issue. One way in which women’s health is overmedicalized occurs when natural processes, such as menstruation, pregnancy, menopause, and ageing, are treated as a disease or medical condition.

An example of overmedicalization is bone mineral density (BMD) testing. One of the primary ways that BMD testing has been promoted and marketed is in relation to osteoporosis. BMD is done to determine one element of bone strength and is used to predict clinically significant osteoporosis in the future. A recent review of the evidence-based literature, however, has uncovered some facts about BMD testing and osteoporosis that have not received public attention due to the vested interests of the proponents of the medical model.

BMD is currently measured in British Columbia using Dual-Energy X-ray Absorptiometry (DEXA). The results are then compared to a standard normal distribution (bell curve) of BMD for young adults at peak BMD, which is a dubious comparison since BMD loss is a natural function of ageing. Individuals with BMD between 1 and 2.5 standard deviations below
the mean for peak BMD are considered to have low BMD; those below 2.5 standard deviations are labelled as having osteoporosis. Based on this definition, 66% of women over age 40 would be labelled as having either low BMD or osteoporosis.

While BMD testing has been marketed as a means to diagnose osteoporosis, osteoporosis is asymptomatic until fracture occurs and it is fracture, particularly hip and vertebral fracture, that has repercussions both for the health care system and for the individual.

Despite this, women are encouraged to have a BMD test done, particularly around the age of menopause, to determine a course of treatment (such as hormone replacement therapy). While proponents of BMD testing argue that abnormal test results will encourage compliance with treatment measures, the BCOHTA review4 found some unintended negative side-effects of testing:

- BMD is not the best predictor of who will go on to fracture - of those who have hip fractures, 60% had normal BMD, while only 40% had low BMD. Ageing is the best single predictor, while the presence of multiple risk factors is the best predictor of who will go on to fracture5.

This finding was supported by similar reviews. One such review from Alberta is an examination of the available scientific evidence on the performance of BMD testing and related interventions in menopausal women to prevent fractures later in life. Based on their findings, the researchers projected that, using BMD testing in combination with Hormone Therapy or intranasal Salmon Calcitonin, only 1-7% of hip fractures would be prevented.

Similarly, another review concluded that measurement of bone mineral density is not a useful screening test for future hip fracture or for most vertebral fractures because differences in bone density between people who subsequently have a fracture and those who do not are too small to discriminate between them.

- since the rate for BMD loss is variable over time for the same woman and among women, testing cannot predict future BMD loss;
- BMD test results can encourage women to employ strategies which will increase the likelihood of fracture. For example, some women who find out they have low BMD will

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In BC, there are presently 12 BMD testing machines - 6 of which are privately owned and 6 of which are for publicly-funded testing. In 1995/96, Medical Services Plan (MSP) paid $1.3 million for BMD testing.

Figure 1 presents the regional picture for BMD testing.

Figure 1: Bone Mineral Density Testing Utilization by Region*
Per 100,000 Population 1995/96

<table>
<thead>
<tr>
<th>Age Standardized Rates by Health Region (per 100,000 population)</th>
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<tbody>
<tr>
<td>1 East Kootenay (X)</td>
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<tr>
<td>2 West Kootenay-Salmo (260)</td>
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<tr>
<td>3 North Okanagan (480)</td>
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<tr>
<td>4 South Okanagan-Similkameen (590)</td>
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<tr>
<td>5 Thompson Valley (120)</td>
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<tr>
<td>6 Upper Fraser Valley (97)</td>
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<tr>
<td>7 South Fraser Valley (259)</td>
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<tr>
<td>8 Simon Fraser (318)</td>
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<tr>
<td>9 Coquitlam (5)</td>
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<td>10 Central Vancouver Island (539)</td>
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stop certain activities out of fear of fracture. However, since exercise is a major preventive strategy, they are actually increasing their risk of fracture. The converse is also true in some instances; that is, women who are told they have normal BMD may not take measures (such as exercising) which will reduce their risk of future fracture;

• the test frequently gives inaccurate results such that some women will be classified as having normal BMD when in fact they have low BMD and, conversely, some will be told they have low BMD when in fact, their BMD is in the normal range; and,

• BMD testing directs funds away from measures which could reduce the incidence of fracture.

WHY HAS BMD LOSS BECOME OVERMEDICALIZED?

Adding to the complexity of the issue are the vested interests of the private health care industry. Radiologists performing private testing charge about $140 for the same test for which MSP pays $51.60. Also, the drug companies who sell drugs (such as hormone therapy and Alendronate (Fosamax)) that are marketed to women who have low BMD, have already fractured, or who fear either situation, are employing strategies to increase public awareness and fear of osteoporosis and to encourage BMD testing. For example, Merck Frosst is marketing osteoporosis by offering financial support to clinics or hospitals to set up an osteoporosis program and to designated physicians to do continuing medical education about osteoporosis on a large scale throughout BC.

WHAT ARE THE ALTERNATIVES?

Fortunately there are alternatives to BMD testing that are more effective for fracture prevention, involve less expensive technology, and are less invasive treatment measures; that is, they do not subscribe to the medical model of treatment. The most promising fracture prevention strategies are:

• exercise (particularly weight bearing);

• vitamin D supplementation");

• limiting alcohol intake;

• reducing sleep inducing and steroid drugs;

• using soft hip protectors; and,

• falls prevention such as home assessment measures that remove fall hazards, and ensuring that eye glass prescription strength is adequate.

Exercise is potentially the most effective strategy for preventing and treating BMD loss and for fracture prevention...reduction in habitual physical activity is likely to be the major reason for the doubling rates of hip fracture over the past 30 years or so. Law et al. reviewed 6 studies on exercise and hip fracture and concluded that the effect of regular exercise was substantial, reducing the risk of hip fracture by about half. Exercise also had the added benefit of increasing stability and balance, thereby reducing the risk of falling.

It was found that walking alone is not sufficient but that a combination of various weight bearing exercises performed regularly (i.e. at least three times a week) has the greatest benefits.

SUMMARY

Based on the scientific evidence, it appears that BMD testing is not the best approach to BMD loss and the prevention of fractures. Instead, adopting a healthier lifestyle (such as regular weight bearing exercise and stopping smoking) as well as taking measures which will prevent falls (such as re-evaluating medications) are more likely to decrease fracture risk, are less expensive both to the health care system and to the individual, are less medicalized, and may even produce some unintended positive side-effects.
NOTES

1 Green, et al.
2 Figure 1 shows the utilization rates of BMD testing by region.
3 This amount includes only the portion paid by MSP and does not include out-of-province third party payer claims, scans done at private facilities, or the various economic costs associated with testing (e.g. payments for physician visits for testing and follow-up; cost of medication, and treatment-related side effects, and the costs to patients, their families and society in terms of loss of time, productivity and additional expenses.
4 Green, et al.
5 Risk factors include: age 80 or older; maternal history of hip fracture; any fracture (except hip) since the age of 50; fair or very poor health; previous hyperthyroidism; anticonvulstant therapy; current long-acting benzodiazepine therapy; current weight less than at the age of 25; height at the age of 25 less that 168 cm; caffeine intake more than the equivalent of two cups of coffee per day; on feet less than 4 hours per day; no walking for exercise; inability to rise from chair without using one's arms; poor visual contrast sensitivity; and pulse rate less than 80 per minute. [Note: after "age" no single risk factor dominates.] (Green, et al.)
6 Re-printed with permission of the British Columbia Office of Health Technology Assessment.
7 International Network of Agencies for Health Technology Assessment.
9 Law, et al., p. 455.
10 Rubins and Cummings in Green et al.
11 Smoking accelerates the rate of post-menopausal BMD loss (Law, et al., p. 456).
12 Note: while calcium supplementation is touted as both prevention and cure for BMD loss, the evidence is inconclusive (Law, et al., p. 457).
13 Alcoholics have low BMD and a dramatically greater increased risk of hip fracture (between 4 and 8 times higher than case-controls). While moderate alcohol consumption does not affect BMD loss, it may predispose individuals to falling and therefore fracture (Law, et al., p. 457).
14 One example is the use of benzodiazepines.
15 [Note: There has been limited usage of this option to date. Early trials have indicated that compliance rates may be low.]
16 Law et al., p. 456-7.
17 Ibid.

BIBLIOGRAPHY


