Prevention and management of osteoporosis: Consensus statements from the Scientific Advisory Board of the Osteoporosis Society of Canada

1. Introduction

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Osteoporosis is a major health problem in Canada, causing fractures, disability, pain and deformity in a growing number of adults, especially women. Osteoporosis affects up to one in four women over 50. As many as two million Canadians may be at a risk of osteoporotic fracture during their lifetime.

Osteoporosis is also an important cause of death among elderly people. Hip fractures related to osteoporosis result in death in up to 20% of cases. Women's mortality rates from osteoporosis-related fracture are greater than the combined mortality rates from cancers of the breast and ovaries.

The number of Canadian men with osteoporosis is also increasing; one in eight men over the age of 50 is affected.

An even higher prevalence of osteoporosis can be expected soon as Canada's population ages. In fact, the number of osteoporotic fractures is growing faster than the number of elderly people in the population.

The treatment of fractures represents the most substantial direct cost of osteoporosis to the health care system. The annual cost of all fracture treatment in Canada is about $1 billion. However, early intervention can prevent osteoporotic fractures through a combination of lifestyle, diet and therapeutic approaches. Once established, osteoporosis is difficult to reverse. The burden that reactive treatment imposes on Canadians and their health care system can be minimized only through prevention.

Until recently, estrogen therapy was the only drug intervention approved in Canada for osteoporosis prevention. However, estrogens are contraindicated for many women and unacceptable to many others. No treatment option had been approved for men. In 1995, the bisphosphonates, etidronate and alendronate, were approved as alternative therapies. However, these have not been tested adequately for effectiveness in men. Evaluation of the efficacy and safety of other agents proposed for osteoporosis treatment is still incomplete.

The Scientific Advisory Board (SAB) of the Osteoporosis Society of Canada (OSC) has convened three consensus conferences on subjects related to the prevention and management of osteoporosis. The first, held in Winnipeg on Sept. 10, 1987, established its position on calcium nutrition and bone health,[1] and estrogen therapy to prevent and treat osteoporosis after menopause.[2] On Sept. 9, 1993, the SAB met in Vancouver, BC, to reexamine these position statements in light of subsequent reports of a number of well-controlled clinical trials, particularly in the area of calcium nutrition. At the same conference, the SAB examined the use of bone densitometry, focusing on indications for its use and ways of making densitometry reporting more understandable for the average physician. Since the 1993 conference, SAB

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members have revised these papers, and present the updated versions here.

From Sept. 29 to Oct. 1, 1995, the SAB met again, in Niagara-on-the-Lake, Ont. to develop consensus statements on treatments of osteoporosis available to physicians in Canada. Some of these pharmacologic therapies have not received approval from the Health Protection Branch of the Government of Canada for the treatment of osteoporosis. Nevertheless, most have been approved in other countries and are being prescribed by some Canadian physicians. Members of the SAB believe that this is the appropriate time to examine the evidence supporting the use of these therapies and present their conclusions to Canadian physicians. We also examined the role of physical activity in the treatment of established osteoporosis and developed a consensus on this topic.

In holding these conferences and preparing the proceedings, the SAB had three major aims:

- to examine available evidence and establish consensus positions on diagnosis, prevention and treatment of osteoporosis,
- to share the conclusions with members of the medical professions and the public and make recommendations for Canadian physicians interested in available pharmacologic therapies, and
- where the evidence in support of a therapy is deficient, to make recommendations for future studies.

The consensus conferences were not intended to provide clinical practice guidelines for family physicians or other health care professionals. The SAB is preparing such guidelines, incorporating some of the conclusions of the conferences. Briefly, those conclusions are as follows.

- Bone density measurement is the best indicator of osteoporotic fracture risk. Adoption of quality standards for dual-energy x-ray absorptiometry will further refine the use of this tool.
- The risks associated with ovarian hormone therapy need continued study, although estrogen remains the front-line pharmaceutical intervention for prevention and treatment of osteoporosis in postmenopausal women. The bisphosphonate drugs are a good alternative therapy and appear to be effective in men. Calcium and vitamin D supplements can serve as an adjunct to regular therapy; adequate calcium nutrition is essential for bone health. The benefits and risks associated with vitamin D therapy need further study.
- Calcitonin and slow-release sodium fluoride may also be effective in treating established osteoporosis. Calcitonin reduces acute osteoporotic fracture pain. More study of both these drugs is needed.
- Regular, moderate exercise can decrease the risk of falls and fractures and improve overall quality of life for people with osteoporosis. The SAB recommends that physical activity be used as an adjunct to other therapies and be accompanied by an appropriate nutrition program.

The following reports summarize the deliberations of the 1993 and 1995 consensus conferences and represent the current opinions of the OSC's Scientific Advisory Board. The conferences were organized and chaired by Dr. David Hanley, who also provided editorial assistance to the authors of the consensus papers. Many other members of the SAB and invited guests participated in these conferences and reviewed the papers (Appendix 1).

The next 20 years will bring new challenges to Canadian physicians specializing in osteoporosis as aging and changes in lifestyle affect our population to an unprecedented degree. Specialists in related areas will also encounter more of the serious effects of osteoporosis. We offer these documents as a resource to Canadian health professionals in the hope that they will stimulate interest in this rapidly growing field and reinforce the message that osteoporosis is a disorder that can be prevented and treated.

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Dr. Jim Dubé passed away not too long after the 1993 conference. Although severely weakened by his medical problems, Jim maintained his commitment to the goals of the OSC, and we all appreciated the extra effort he made to participate in the 1993 conference.

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Appendix 1: Participants at the 1993 and 1995 consensus conferences

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