

The need for epidemiological studies describing osteoporosis in Elbasan region

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Abstract

Osteoporosis is a progressive bone disease that is characterized by a decrease in bone mass and density which can lead to an increased risk of fracture. Furthermore, osteoporosis is a recognized complication in several specific diseases and medical disorders. Risk factors for the fractures resulting from osteoporosis are categorized into non-modifiable and (potentially) modifiable risk factors. The presence of osteoporosis can be established by use of conventional radiography and by measuring the bone mineral density. Medication use is theoretically modifiable, although in many cases, the use of medication that increases osteoporosis risk may be unavoidable.

The international literature recommends screening by bone densitometry for all women aged 65 years or older. In addition, it is recommended to provide screening for women with increased risk factors. On the other hand, in men, the harm versus benefit of screening for osteoporosis is unknown.

The information about the magnitude and distribution of osteoporosis in population-based studies from Albania including Elbasan region is scarce. Therefore, there is a need to conduct epidemiological studies in order to assess the prevalence and distribution of osteoporosis in Elbasan region and other regions of Albania.

Keywords: bone densitometry, Elbasan, fractures, osteoporosis, screening.

Introduction

Osteoporosis is defined by low bone mass density and increased fragility of bone, which increases the risk of fracture (1). Assessment of bone mass by densitometry has become vital for the diagnosis of osteoporosis and the resultant treatment to prevent eventual fractures (2). It has been estimated that osteoporosis affects about 55% of American adults aged ≥ 50 years (3). Of these, approximately 80% are women (3). At a global scale, approximately one in three women and one in 12 men aged 50 years are estimated to have osteoporosis (4). Osteoporosis is responsible for millions of fractures annually, mainly involving the lumbar vertebrae, hip and wrist (3). At the same time, fragility fractures of ribs are also common in men (3). Osteoporosis causes considerable morbidity and, only in USA, it costs \$13.8 billion per year (5).

Consequences of osteoporosis

Fractures comprise the most serious consequences of osteoporosis. In the United States of America, about 1.5 million fractures annually are attributable to osteoporosis (6). Of these, 700,000 consist of vertebral fractures, 250,000 include distal forearm (Colles') fractures, 250,000 consist of hip fractures, and further 300,000 include fractures of other limb sites (6). Hence, only in the United States, about 250,000 hip fractures annually are attributable to osteoporosis (6). On the other hand, 35% to 50% of all US women over 50 years of age have been reported to have at least one vertebral fracture (6). As mentioned above, 700,000 vertebral fractures occur annually in the US, but only about a third of these are clinically recognized (6). As for the wrist fractures, about 250,000 annually are attributable to osteoporosis, comprising the third most common type of osteoporotic fractures (6). Conversely, fragility fractures of the ribs are not uncommon in men as young as 35 years of age (4,6). These markers of osteoporosis are often neglected and overlooked because most of the men of this age-group are often physically active and experience fractures only in the course of physical activity,

which opportunistically reveals the presence of osteoporosis (through e.g. a quick test of testosterone level following the diagnosis of the fracture) (7).

Risk factors for osteoporosis

It should be noted that men and women of all ages and ethnic groups are at some risk for osteoporosis (8). Nevertheless, the following categories have an increased risk for development of osteoporosis:

- Women (especially, post-menopausal women);
- White/Caucasian ethnicity (9);
- Older individuals;
- Heredity (10);
- People who are small in body size (8);
- Individuals with dietary patterns particularly low in calcium (8), and;
- Sedentary individuals (i.e. those who are physically inactive) (8).

As for the lifetime risk of fractures of the spine (symptomatic), hip, and distal radius, it has been estimated at 40% for white women and 13% for white men aged ≥ 50 years (6). In addition, after a hip fracture, there is an excess mortality of 10%-20% over the subsequent 6 months, a further 50% of the affected individuals will be unable to walk without assistance, and about 25% will require long-term home care which is highly costly (6).

As for the lifetime risk of fracture of the proximal femur, it is estimated to be about 17.5% among women aged 50 years (6). However, the incidence of hip fractures increases rapidly each decade from the sixth through the ninth in both sexes and in all populations regardless of their ethnicity, or other characteristics. Hence, it is not surprising that the highest incidence of hip fractures is evident among men and women aged 80 (6,11).

Screening and diagnosis of osteoporosis

Current evidence-based guidelines recommend screening for all white women older than 65 years and not already receiving an osteoporosis treatment

(7). Furthermore, screening for osteoporosis is also recommended for many non-white women (7). For post-menopausal women who are younger than 65 years and have clear evidence of risk factors for osteoporosis, screening is also considered beneficial, at least to a certain extent (7).

The diagnosis of osteoporosis is done by use of conventional radiography and by measuring the bone mineral density (12). The most popular method of measuring bone mineral density is dual-energy x-ray absorptiometry (12).

As for the usefulness of screening, it has been argued that densitometry might be more effectively used in practice if strategies such as having patients fill out a short questionnaire to assess for risk factors or creating a nurse-based system were used to identify patients (7). From this point of view, it is considered that clinicians need to employ better approaches for identifying patients most likely to benefit from screening, systems that facilitate their application, and test results that are easy to interpret (7).

Management and treatment of osteoporosis

Management of osteoporosis consists of improvement of lifestyle/behavioral factors which affect the occurrence of this condition such as physical activity, or nutritional habits. Thus, physical exercise strengthens muscles and improves bone strength in individuals with osteoporosis. In addition, smoking cessation and moderation of alcohol consumption are considered preventive measures (13). On the other hand, currently, there is insufficient evidence to determine if supplementation with calcium and vitamin D results in

greater harm or benefit in men and premenopausal women (14). Conversely, bisphosphonates are considered useful in decreasing the risk of future fractures among individuals who have already experienced a fracture due to osteoporosis (15).

Osteoporosis in Elbasan region

The information about the magnitude and distribution of osteoporosis in population-based studies from Albania including Elbasan region is scarce. The available information – not well-documented though – suggests an increase in the prevalence of osteoporosis in both sexes, particularly among women. As a matter of fact, the increasing trend in the prevalence of osteoporosis goes in line with the increase in life expectancy in both sexes in Albania in the past decades. Nonetheless, to date, there is lack of well-documented and scientific evidence about the frequency and determinants of osteoporosis in the adult population of Elbasan and other parts of Albania. Therefore, there is a need to conduct epidemiological studies in order to assess the prevalence and distribution of osteoporosis in Elbasan region and other regions of Albania. The population-based studies in Elbasan region should consist of robust protocols in line with the current international practices. From this perspective, there is a need to employ standardized and internationally valid instrument for assessment of the magnitude and predictors of osteoporosis in the adult population of Elbasan. Employment of standardized instruments for determination of osteoporosis in Elbasan and other regions of Albania would also enable international comparability with other countries in the region and beyond.

Conflicts of interest: None declared.

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