Age, BMI and History of Fractures in a Female Hispanic Group with Osteopenia:

Secondary Analysis

Jorge Rivera Vázquez, BSN(s)
University of Puerto Rico Mayagüez
Department of Nursing

Introduction

Low bone mass density is a strong risk factor for fractures. According to the National Center for Health Statistics, (2015) the percentage of adults aged 65 with low bone mass at the femur neck was 16.2% and the age adjusted prevalence is higher in women. The prevalence of low bone mass in Hispanic women over 65 years old was 52.3% and it did not change with increase age (CDC/NCHS, 2010). As the bone mineral density deteriorates, bones become fragile placing women at increased risk of fractures of the hip, spine and wrist.

In the United States low bone mass or osteoporosis is reflected in more than 53 million people (Looker, & Frenk, 2015). Women are at higher risk of bone fractures with additional risk factors. Bone fractures are a cause of incapacity and decrease quality of life, at older age, hence preventive measures and awareness can delay or eliminate this outcome. Those selected to evaluate in this group of women were found a BMI at obesity level. The most frequently reported fracture was at upper and lower extremities phalanges indicating possible falls. Studies have found that fractures are most frequent in women with osteopenia. Women with osteopenia will benefit from activities for fracture prevention, exercise, weight bearing and further risk evaluation to delay or limit the transition to osteoporosis. It is recommended a larger sample and inferential statistical.

Methods

A descriptive study from aggregated data was obtained for a secondary analysis of 79 records of Densitometry with a Dual-energy X-ray absorptiometry done in a Hispanic female sample from the west of Puerto Rico. Records obtained for this secondary analysis did not have patient identifiers or private health information that could be matched to a person. Inclusion criteria included only female patients with history of fractures. Two patients were excluded because their BMI results were illegible.

A total of 77 reports of women who underwent densitometry between 2013-2015 were included. The mean age of women was 62 years and Body Mass Index of 28.2. The mean bone mineral density -2.5/2.6 g/cm² at head of femur. A total of 51 women reported history of fracture. Of those women who reported history of fracture, mean age was 62 years with a BMI of 29. The mean bone mineral density T-Score of this group was -1.83 SD, (n=26,51%) with osteopenia; -3.36 SD (n=21, 41%) for osteoporosis. Z-Scores demonstrated that bone loss was comparable to population characteristics. The most frequent fracture reported was of the foot or hand phalanges.

As a risk assessment tool, the FRAX ® website is an interactive tool that calculates the fracture probability of a woman patient, for both hip and non-vertebral fractures. It is a useful tool for health care providers in the assessment of patients with risk of osteoporosis. It has been found that the FRAX ® tool can be used in routine clinical practice (Ruff, V., Acosta, A., Soto-Molina, F., & Raggi, P. 2010). The website offers the clinician the chance to calculate the risk of hip and non-vertebral fractures of a particular woman based on her clinical risk factors and bone density measurement. The risk assessment tool helps in the identification of high-risk patients, in whom further evaluation is required to delay the fracture incidence.

The FRAX ® tool is based on a series of algorithms that are presented in the form of a clinical risk score and the results are presented in the form of a 10-year risk of hip fracture and a 10-year risk of non-vertebral fracture. The tools have been validated in a series of studies and have been found to be accurate and reliable in predicting the risk of fracture in women with osteoporosis. The tool is based on a series of algorithms that are presented in the form of a clinical risk score and the results are presented in the form of a 10-year risk of hip fracture and a 10-year risk of non-vertebral fracture. The tools have been validated in a series of studies and have been found to be accurate and reliable in predicting the risk of fracture in women with osteoporosis.

The FRAX ® tool is available on the website of the World Health Organization and can be accessed through the following link: http://www.shef.ac.uk/FRAX/

Conclusions

As age increases the risk of bone fragility also increases. Elevated body mass index (BMI) and bearing to the bones is not associated with low bone mass. In this group of women we found a BMI at obesity level. The most frequently reported fracture was at upper and lower extremities phalanges indicating possible falls. Studies have found that fractures are most frequent in women with osteopenia. Women with osteopenia will benefit from activities for fracture prevention, exercise, weight bearing and further risk evaluation to delay or limit the transition to osteoporosis. It is recommended a larger sample and inferential statistical.

Readings

Table 1: Average age, body mass index, history of fractures

| Table 2: Self-reported fracture area |

Results

| Graph 1: Bone Mass Density Scores of women who reported history of fractures |

Bibliography

[References from the text are not shown in the natural text representation.]