



REVISTA BRASILEIRA DE REUMATOLOGIA

www.reumatologia.com.br



Original article

Association between body mass index and osteoporosis in women from northwestern Rio Grande do Sul[☆]

Letícia Mazocco^a, Patrícia Chagas^{a,b,*}

^a Universidade Federal de Santa Maria (UFSM), Programa de Pós-Graduação em Gerontologia, Santa Maria, RS, Brazil

^b Universidade Federal de Santa Maria (UFSM), Departamento de Alimentos e Nutrição, Palmeira das Missões, RS, Brazil

ARTICLE INFO

Article history:

Received 25 August 2014

Accepted 23 July 2016

Available online xxx

Keywords:

Osteoporosis

Body mass index

Women

Bone mineral density

ABSTRACT

Objective: To investigate the association between body mass index (BMI) and bone mineral density (BMD) in postmenopausal women.

Methods: Observational study with postmenopausal women who underwent bone densitometry in Palmeira das Missões – RS. Sociodemographic data, risk for osteoporosis and food intake were assessed through a specific form. BMI was calculated according to WHO criteria. The assessment of BMD was performed by dual-energy X-ray absorptiometry (DXA) and classified according to WHO. Statistical analysis was performed using prevalence ratios (PR) and their respective 95% confidence intervals for the factors studied. Variables associated with $p < 0.20$ with the different outcomes (osteopenia and osteoporosis) were included in a Poisson regression model with robust variance to adjust for potential confounding factors. A 5% significance level was considered.

Results: 393 postmenopausal women with a mean age of 59.6 ± 8.2 years participated.

After the adjustments, the normal weight women had 1.2 times the prevalence of osteopenia of obese women (PR = 1.2; CI 95% 1.3–1.5). Considering osteoporosis, the PR of euthopic women was twice the PR of obese women (PR = 2; CI 95% 1.4–2.9) and was 1.7 times greater for overweight group compared to obese category (PR = 1.7; CI 95% 1.2–2.5).

Conclusion: Obese women had lower prevalence of osteopenia compared with normal weight subjects and also with lower prevalence of osteoporosis as compared to normal- and overweight women.

© 2016 Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

[☆] Study conducted with Fundo de Incentivo à Pesquisa (FIPE), Universidade Federal de Santa Maria (UFSM) support, Santa Maria, RS, Brazil.

* Corresponding author.

E-mail: patriciachagas.ufsm@hotmail.com (P. Chagas).

<http://dx.doi.org/10.1016/j.rbre.2016.10.002>

2255-5021/© 2016 Published by Elsevier Editora Ltda. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Associação entre o índice de massa corporal e osteoporose em mulheres da região noroeste do Rio Grande do Sul

R E S U M O

Palavras-chave:

Osteoporose
Índice de massa corporal
Mulheres
Densidade mineral óssea

Objetivo: Verificar a associação entre o índice de massa corporal (IMC) e a densidade mineral óssea (DMO) em mulheres pós-menopáusicas.

Métodos: Estudo observacional, com mulheres pós-menopáusicas submetidas à densitometria óssea em Palmeira das Missões (RS). Dados sociodemográficos, de risco para a osteoporose e do consumo alimentar foram avaliados por meio de formulário específico. O IMC foi calculado de acordo com a Organização Mundial de Saúde (OMS). A avaliação da DMO foi feita por meio de absorciometria por dupla emissão de raios-X (DXA) e classificada de acordo com a OMS. A análise estatística foi feita por meio de razões de prevalência (RP) e os seus respectivos intervalos de 95% de confiança para os fatores em estudo. Variáveis que se associaram com $p < 0,20$ com os diferentes desfechos (osteopenia e osteoporose) foram incluídas em um modelo de regressão de Poisson com variância robusta para ajuste para potenciais fatores de confusão. Foi considerado um nível de significância de 5%.

Resultados: Participaram 393 mulheres pós-menopáusicas, com média de $59,6 \pm 8,2$ anos. Após os ajustes, as mulheres eutróficas apresentaram 1,2 vez a prevalência de osteopenia das mulheres obesas (RP = 1,2; IC 95% 1,3-1,5). E em relação à osteoporose, no grupo das eutróficas a RP foi duas vezes a RP das obesas (RP = 2; IC 95% 1,4-2,9) e 1,7 no grupo com sobrepeso em relação à categoria obesidade (RP = 1,7; IC 95% 1,2-2,5).

Conclusões: As mulheres obesas apresentaram menor prevalência de osteopenia em comparação com as eutróficas, bem como tiveram menor prevalência de osteoporose em comparação com as mulheres eutróficas e com sobrepeso.

© 2016 Publicado por Elsevier Editora Ltda. Este é um artigo Open Access sob uma licença CC BY-NC-ND (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Osteoporosis is a bone metabolic disorder that is characterized by reduced bone mineral density (BMD), with deterioration of bone microarchitecture, leading to increased skeletal fragility and risk of fracture.¹ Osteoporosis is the most common bone disease in humans and is being considered as one of the major public health problems worldwide, due to an increase in life expectancy of the population and to the high rate of morbidity and mortality related to fractures, especially those in the hip.² In Brazil, it is estimated that there are approximately 10 million people with osteoporosis,³ affecting individuals of both genders and all races, and its prevalence increases as the population ages.⁴ About 25% of post-menopausal women and 15% of men over 50 are affected by the disease.³

According to the Ministry of Health of Brazil, in 2012 about 1.6 million fractures from osteoporosis were registered.³ Fractures, especially in the hip, are associated with falls, regardless of bone density,⁵ and ultimately reduce the quality of life.⁶ Each year, the Unified Health System (SUS) in Brazil has shown increasing costs of fracture treatment in older people. Only in 2009 R\$57,610,000.00 were spent with admissions and R\$24,770,000.00 with drugs for the treatment of osteoporosis.³

Among the determinants of BMD, one can find genetic factors (family history of fracture and osteoporosis in first-degree relatives), advanced age, white and oriental race, and chronic estrogen deprivation – and all of these variables cannot be modified.⁷ But in fact, there are modifiable factors: eating

habits, sedentary lifestyle, body composition, smoking, prolonged corticosteroid therapy, excessive intake of alcohol and coffee, and low sunlight exposure.^{7,8}

Bone density is the main measurable determinant of risk of occurrence of a fragility fracture⁹ wherein lower body mass index (BMI) is associated with a substantially increased risk of fractures.¹⁰ This study aims to investigate the association between BMI and BMD in a sample of postmenopausal women undergoing bone densitometry in Palmeira das Missões – RS.

Materials and methods

We conducted an observational study of postmenopausal women who underwent bone densitometry in a clinic specializing in imaging diagnostic of the city of Palmeira das Missões – RS between October 2012 and December 2013.

The sample consisted of 393 women who agreed to participate in the study and signed an informed consent.

Socio-demographic data (age, marital status, education, and occupation) and risk factors for low BMD (smoking, sedentary lifestyle, and consumption of certain foods: milk, yogurt, cheese, alcohol and coffee) were evaluated by using a standardized questionnaire. In this sample, women who did not perform exercise were classified as sedentary subjects.

The anthropometric parameters assessed were weight, height, and BMI. Weight was measured using a calibrated anthropometric scale, with the barefooted patient wearing a hospital gown for the measurement. Height was measured using a stadiometer attached to the anthropometric

Download English Version:

<https://daneshyari.com/en/article/8742583>

Download Persian Version:

<https://daneshyari.com/article/8742583>

[Daneshyari.com](https://daneshyari.com)