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Research Article

The Investigation of the Awareness of Osteoporosis in Postmenopausal Women

Abstract

Background and Aims: The awareness of osteoporosis is essential of treatment. We investigated the awareness of osteoporosis in the patients with postmenopausal women in the region of Northeastern Anatolia, Turkey.

Methods: Two hundred forty postmenopausal women were included into this study. We detected the age of menopause, the consciousness of osteoporosis, dual x-ray absorptiometry reports, habits of regular walking, drinking of milk, used to calcium and vitamin D supplementation or any antiosteoporotic medicine. Statistical analysis was made by SPSS-20 and data were expressed as mean, standard deviation, minimum- maximum and percent (%).

Results: The average age of menopause was 11.7 ± 8.3 years. 90.5% were have the awareness of osteoporosis in the patients with postmenopausal. 71.6% had DXA reports and the percentage of regular consumption of vitamin D and calcium were 60.5%. Unfortunately, the habits of regular walking (5 km or 10.000 steps per day), the regular consumption of milk (1.0 L per day) and used to any drugs for osteoporosis were low, respectively 23.4%, 0.5%, and 9.4%.

Conclusions: In our study the awareness of osteoporosis among the postmenopausal women were high. Unfortunately, the percentage of prevention and therapeutic intervention for postmenopausal osteoporosis were low. This condition may improve with the effort of health personals and used to media canals..

Introduction

Osteoporosis (OP) is a common skeletal disorder characterized by low bone mass and increased bone fracture risk due to the impairment of bone tissue microarchitecture [1]. OP is increasing in parallel with the increase of the average age of the society and continues to be a serious public health problem which is encountered at advanced age and affects the quality of life of the people. One of the clinical significance of OP is fractures. Weakness, lack of movement, fracture and also death can be seen in many people with OP [2]. Early diagnosis is important in preventing fractures and complications that may develop due to OP. Therefore, women who are in postmenopausal period should be performed with dual X-ray absorptiometry (DXA) with careful anamnesis and physical examination [3]. Besides, OP is of importance because of the loss of labor force, occupation of hospital bed and use of expensive drugs for a long time. It is estimated that 50% of women and 20% of men over 50 year's age will be exposed to an osteoporotic fracture during the remainder of their lives [4].

Risk factors for OP and osteoporotic fractures can be listed as aging, low bone mass, being female, early menopause, genetic factors, weak body structure, lifestyle, nutrition, medical conditions and falling. Balance and gait disturbances, sensory loss, decreased muscle strength, visual and auditory disorders are the situations that increase the risk of falling [5].

Menopause is a natural phenomenon of the normal aging process characterized by a permanent discontinuation of menstruation as a result of decrease in estrogen secretion. Changes in the body due to the effects of estrogen insufficiency are observed in many women during menopause. OP is one of these changes.

Treatment approaches for OP are mainly based on the reduction of the fracture risk by increasing the bone density. Regular exercise, intake of calcium and vitamin D and drug therapies are used for this purpose. In this study, we aimed to question the awareness of OP and OP treatment in postmenopausal women.

Materials and Methods

A total of 240 postmenopausal women who applied to Atatürk University Medical Faculty Internal Diseases, Endocrinology & Metabolism Diseases outpatient clinic and accepted to participate in our questionnaire were enrolled in our study between December 2012 and May 2013. The presence of menopause was confirmed by elevation of blood FSH levels. The eligibility requirement for inclusion criteria in the study were to be aged >18, having the diagnosis of OP and adequate cognitive abilities, while patients with premenopausal OP, secondary OP and mental retardation were excluded from the study. The patients' anamnesis were first taken and physical examinations were performed. The following questions were directed to the participants;

1. How old are you?
2. How many years were you on menopause?
3. What do you know about OP?
4. Did you test your bone densitometry for OP with DXA?
5. Do you walk about 1 hour (5 km) regularly every day?
6. Do you use milk, dairy product, calcium supplements, vitamin D or any medicine which is used for treatment of OP?

Statistical analysis

Statistical analysis was made using computer software SPSS version 20.0 (SPSS Inc. Chicago, IL, USA). Data were expressed as mean, standard deviation, minimum- maximum and percent (%); where appropriate.

Results

A total of 240 postmenopausal women were enrolled to our study between December 2012 and May 2013 in Atatürk University, Faculty of Medicine. The average age of participants was 59.04 ± 6.9 years (46-83 years) and the mean duration of menopause was 11.7 ± 8.3 years (1-43 years). The demographic characteristics of the patients is shown in table 1.

There were 217 (90.5%) patients who knew that bone erosion begins after entering the menopause and 23 (9.5%) were not. 171 (71.6%) had DXA and the remaining 69 (28.4%) women did not. The number of those who regularly walks 5 km per day among participants was 56 (23.4%) and the number who does not walk was 184 (76.6%). Consumption of dairy product were questioned with "how many cups of milk each day do you drink?". The number of patients who regularly drink milk was 81 (34%) and who did not drink milk regularly was 159 (66%). The 145 (60.5%) patients took vitamin D and

calcium regularly. Participants were asked whether they used current treatments to assess the awareness of OP treatment. It was detected that 167 (69.6%) of the patients received an osteoporotic treatment.

Discussion and Conclusion

OP is a metabolic bone disease that leads to an increased risk of bone fracture which is accompanied by a decrease in bone mass and deterioration of bone microarchitecture. Primer OP is classified as type 1 (postmenopausal OP) and type 2 (senile OP). OP is diagnosed by measuring bone mineral density with DXA [1]. OP is a major cause of mortality and morbidity and it is estimated that the risk of mortality within 2 years is 12-20% in those who have hip fractures [2]. In 2010, 24,000 hip fractures were detected in the Turkish society between the ages of 50-64, and 74% of these cases were female. It is expected that the population will reach 100 million in 2050 and the elderly population will increase 9 times compared to 2010 [6].

After the development of osteoporotic fractures, treatment overloads the country's economy and social security institutions. It is reported that 32 billion Euros were spent for the treatment of osteoporotic fractures in European Union countries in 2000. However, OP is a disease that can be prevented without resulting in fractures, thus reducing morbidity and mortality and contributing to the country's economy.

For these reasons that mentioned above, OP is an important public health problem that should be prevented by diagnosis and appropriate treatment. In this context, it is very important to increase the awareness of OP between health professionals and the general population [7].

Postmenopausal women who are diagnosed with OP are advised to perform weight and muscle strengthening exercises to reduce falls and fracture risk. Daily intake of calcium and vitamin D should be at least 1200 mg and 1500-2000 IU per day, respectively [8,9]. Calcium and vitamin D intake is necessary but not sufficient, also treatment should be supported by antiresorptive therapy [10]. Other medical treatments, used in the treatment of OP are:

- * Bisphosphonates
- * Strontium ranelat
- * Parathyroid hormone (teriparatide)
- * Selective estrogen receptor modulator
- * Hormone replacement therapy
- * Calcitonin

There are various studies about the awareness of OP in the World [11-14]. Njeze Ngozi, R. and et al. reported the rate of consciousness of OP is 37.4% in southeast Nigeria [11]. In another study, Khashayar, P. et al. found the awareness of OP only 18.7% among housewives in Iran [12]. Similarly Gopinathan, N. R. and colleagues found that OP awareness was low among postmenopausal women in India [13]. Alike to this,

Table 1: Demographic characteristics of patients.

	N	Minimum	Maximum	Mean	Std. Deviation
Age	240	46	83	59,04	6,9
Menopause year	240	1	43	11,7	8,3

Nguyen, N. V. et al. reported that consciousness level was as high as 81.6 % in Vietnam [14].

There has been also some studies on this subject in Turkey. Gemalmaz, A. and colleagues found 60.8% of the patients who were aware of OP, 54% in the study performed by Kutsal, G. and their colleagues and 90% in the study conducted by Ungan, M. et al. [15-17]. Compared with the other two studies, our participants showed a high awareness level of OP like with Ungan, M. and et al. Studies in our country show that OP awareness is higher in our country compared to the other countries. It is thought that this situation may be related to the widespread use of television viewing habit among postmenopausal women and in health programs may be associated with frequent handling of this issue. As a matter of fact, in a study which conducted by Gemalmaz, A. and colleagues in Turkey with 768 women, methods of obtaining information about OP were investigated and found that when all participants are considered; learning resources were 55% television, 19,2% doctors and 16,5% nurses [17].

Hollie L. and her colleagues reported that 39% of patients were on medication for OP treatment and 53% were exercising 3 or more times a week. While 42% of all participants had good or excellent knowledge of OP, 55% had little or no knowledge [18]. Although OP consciousness seemed to be low in those patients compared with our study, daily regular exercise, one of the main components of OP prevention were very obviously high (75% versus 23.4%).

Inderjeeth CA and colleagues questioned the knowledge of consciousness and treatment of OP in Australia. 366 patient were evaluated; 48% had knowledge about the definition of OP, 35% had somehow taken DXA and 37% of patients were using an antiosteoporotic treatment [19]. In our study, 69.6% of the participants were using antiosteoporotic treatment, the rate of having DXA for the diagnosis and follow-up of OP was 71.6% unlike to this study.

The study we mentioned above that conducted by Nguyen V.N. et al. reported the ratio of vitamin D and calcium intake 78,1% [14]. Although OP awareness was high in our study, the use of regular vitamin D which is one of the cornerstones of OP treatment, was unfortunately found to be lower (34.1% versus 78.1%) than this study.

In another study evaluating OP consciousness in South Asian women, was reported the rate of daily regular exercise was 28% and the rate of regular consumption of dairy products was 59 %. In compare to our study; while the rate of regular exercise was similar (vs. 28%, 23,4%) , but consumption of the dairy products were found low in our study (vs. 59%, 35%) [20].

OP is a public health problem which causes significant mortality and morbidity that could be reduced with awareness studies and preventive measures. In this sense written and visual media should be used for awareness as well as health care specialists' awareness level should be increased to ensure a success about OP prevention and treatment.

In conclusion, the present study and other studies that had done in our country showed that the measures taken to prevent (regular consumption of dairy products and exercise) and the treatment of OP are still insufficient in Turkey. This condition may improve with the effort of health personnel's and media canals.

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