

Rudnicka–Drożak Ewa, Jankowski Krzysztof, Jankowska Paula, Majcher Monika, Jankowska Agnieszka. Evaluation of selected health seeking behaviours and prevention of osteoporosis in perimenopausal women. *Journal of Education, Health and Sport*. 2019;9(3):364-369. eISSN 2391-8306. DOI <http://dx.doi.org/10.5281/zenodo.2598870> <http://ojs.ukw.edu.pl/index.php/johs/article/view/6709> <https://pbn.nauka.gov.pl/sedno-webapp/works/908115>

The journal has had 7 points in Ministry of Science and Higher Education parametric evaluation. Part B item 1223 (26/01/2017).
1223 Journal of Education, Health and Sport eISSN 2391-8306 7

© The Authors 2019;

This article is published with open access at Licensee Open Journal Systems of Kazimierz Wielki University in Bydgoszcz, Poland
Open Access. This article is distributed under the terms of the Creative Commons Attribution Noncommercial License which permits any noncommercial use, distribution, and reproduction in any medium, provided the original author (s) and source are credited. This is an open access article licensed under the terms of the Creative Commons Attribution Non commercial license Share alike. (<http://creativecommons.org/licenses/by-nc-sa/4.0/>) which permits unrestricted, non commercial use, distribution and reproduction in any medium, provided the work is properly cited.

The authors declare that there is no conflict of interests regarding the publication of this paper.

Received: 15.02.2019. Revised: 15.02.2019. Accepted: 20.03.2019.

Evaluation of selected health seeking behaviours and prevention of osteoporosis in perimenopausal women

Ewa Rudnicka – Drożak¹, Krzysztof Jankowski¹, Paula Jankowska¹, Monika Majcher¹, Agnieszka Jankowska¹

1. Chair and Department of Family Medicine Medical University of Lublin

Key words: Osteoporosis, Menopause, Health Behavior

ABSTRACT

Introduction

‘Osteoporosis is a metabolic bone disease, a condition characterized by low bone mass and microarchitectural deterioration of bone tissue, leading to enhanced bone fragility and a consequent increase in fracture risk’. It is a contemporary, currently recognized definition of osteoporosis formed by the research group of World Health Organization. It is estimated that due to increased life expectancy, the number of fractures may rise three times within 60 years, principally given the lack of appropriate strategies of osteoporosis prevention.

Objective

The aim of the paper was to evaluate selected health-seeking behaviours as well as the knowledge of osteoporosis prevention rules in perimenopausal women.

Material and methods

The research method was a self-made survey questionnaire. The population under the survey involved 450 female patients aged 40-65 selected at random.

Results

Survey results indicate insufficient knowledge and health-seeking behaviours among the respondents. What is also striking is the fact of underestimating the relationship between the use of stimulants (cigarettes, coffee, alcohol) and osteoporosis, not enough physical activity of

the subjects as well as the lack of systematic gynecological control concerned with hormonal balance disorders (characteristic for the perimenopausal period).

Conclusions

Insufficient knowledge of prevention and proper health-seeking behaviours contribute to the increase in the incidence of osteoporosis.

INTRODUCTION

The attention paid to osteoporosis – the disease with symptoms including increased bone fragility and susceptibility to fractures is intensified by the fact that prevention and treatment both considerably reduce the risk of its occurrence, and the probability of fractures. The results of the available research show that the development of osteoporosis is not the question of recent years.

Bone mass defect always goes with the process of ageing and it is only the pace of this process that may be accelerated. The cause of osteoporosis has long remained controversial. However, it is not the cause which matters for the population of a given country, but the fact that bone mass defect (determined on the basis of densitometric methods) results in the increased bone fragility worldwide.

When fractures appear, this usually symptomless disease, becomes arduous both for the patient decreasing his life quality and for the society resulting in massive expenses.

It is estimated that due to the increased life expectancy, the number of fractures may rise three times within 60 years, especially given the lack of appropriate strategies of osteoporosis prevention.

Nonetheless, the crucial significance in the issue of osteoporosis is not concerned with the diagnostics or costly treatment, but with prevention. The issue of ‘osteoporosis prevention’ denotes multidirectional, complex activity which comprises education, proper diet, physical exercise, accident prevention, as well as applying hormone replacement therapy (HRT).

The fate of present and future generations, mainly female, depends on the knowledge of risk factors and the discipline of the treatment rules.

OBJECTIVE OF THE WORK

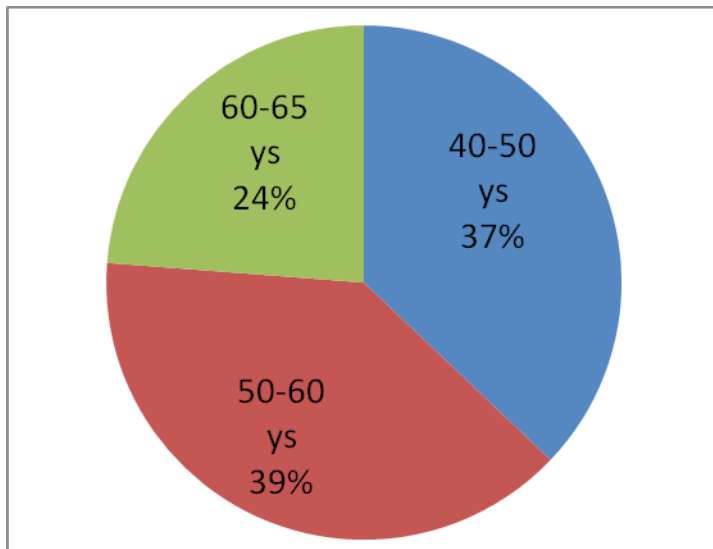
The aim of the research was to evaluate the selected health-seeking behaviours and the level of knowledge of osteoporosis prevention among perimenopausal women.

MATERIAL AND METHODS

The research method was a self-made survey questionnaire. The population under the survey involved 450 female patients aged 40-65 selected at random. The survey was conducted within 15 randomly selected private health care clinics.

RESULTS

The age structure of the female respondents can be described by the following values: 37% of them were aged 40-50, 39% - aged 50-60, while 24% of the respondents were over 60.



Graph. 1. Age of respondents.

The vast majority of the women were country residents – they accounted for 51% of the total, 25% of them were city residents, while 24% of the respondents came from small towns.

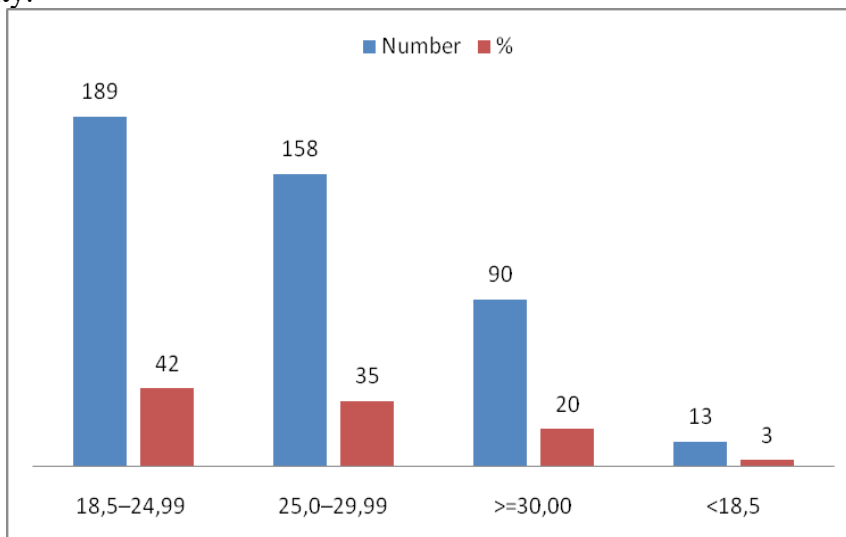
As far as marital status is concerned, the largest group, namely 67%, was constituted by married women, 25% of the respondents were widows, 5% - single and 3% - divorced.

44% of surveyed reported secondary education, 40% - elementary education, 12% - vocational education and 4% - university education.

The majority of the respondents, as many as 54% of the women under survey, are not professionally active, mainly due to the disability pension.

The subjective estimation of social life conditions was very good in 13% of the subjects, good in 54%, satisfactory in 24% while 5% estimated it as bad.

The examination of BMI in the subjects allowed to determine that 42% of the subjects had proper body mass, 35% were overweight, 3% - underweight, while 20% suffered from obesity.



Graph. 2. BMI of respondents.

The attitudes to tobacco smoking were as follows: 79% of the subjects denied smoking, while 21% (mainly town residents) were regular smokers. The average number of cigarettes smoked a day was 20 within this group. The duration of smoking varied from at least 20 years (57.2% of the smokers) to 10 years (19%).

Alcohol consumption in the group under survey was not assessed as substantial. 47% of the subjects declared total abstinence, while 84.9% of the women who drink alcohol admitted occasional drinking – a few times a year.

The consumption of coffee among the respondents was high: 69% of the subjects admitted to drinking it on a daily basis, including the majority drinking 1-2 cups a day.

Frequency	%	n
Everyday	69	311
Every second day	6	30
Once a week	16	71
Less than once a week	5	22
Not using	4	16

Table 1. Caffeine intake.

The frequency of dairy products consumption among the respondents was satisfactory. 62.3% of them included dairy products in their daily diet, 34% - once a week, while the remaining group did not include these products at all. Fruit and vegetable consumption also can be assessed as adequate. Only 1% of women admitted not eating fruit and vegetables at all, while 99% claimed the opposite. What is worth emphasizing, as many as 82% of the respondents included fruit and vegetables in their daily diet.

Slightly more than one half of the respondents (55%) were after the menopause, including 1/3 who had their final menstruation before the age of 45.

DISCUSSION

One of the risk factors in osteoporosis is low body mass. A proper body mass can be determined on the basis of Body Mass Index ($BMI = \text{body mass in kg} / \text{height in m}^2$). The risk of osteoporosis is inversely proportional to body mass – obesity protects against the disease [3]. In our study only 3% of respondents were underweight and majority was protected, when body mass is considered as a risk factor of osteoporosis development.

Smoking cigarettes is another risk factor – it levels the activity of liver microsomal enzymes, which is connected with the more rapid conversion of estrogens into inactive metabolites [6]. Osteoporosis can also occur as a result of alcoholism. In approximately 30% of alcoholics aged below 45 lowered bone mass was recognized, as compared with people at the same age who are not alcohol addicts. The reason for this may be the reduced absorption of calcium from the digestive tract [1]. In our study group smoking was more often declared, being more important in the view of risk of osteoporosis than alcohol consumption.

Another factor that increases the risk of osteoporosis is also excessive caffeine intake. On the basis of previously published surveys negative protein balance following caffeine consumption was recognized. Drinking 2-3 cups of coffee daily accompanied by low calcium consumption triggers enhanced bone mass loss. On the other hand, when calcium intake in postmenopausal women is equal or higher than approximately 800mg daily, caffeine does not have a negative influence on bone condition [5]. Respondents of our survey presented high level of caffeine consumption.

Calcium and vitamin D deficiency is the frequent cause of osteoporosis. Hypovitaminosis D occurs in 40% of men and 30% of women with femoral neck fractures. Vitamin D is indispensable for the proper calcium absorption in the digestive tract. Intestinal calcium and vitamin D absorption decreases with age as well as renal vitamin D conversion. In the normal conditions only 20-40% of calcium contained in food is absorbed in intestines. Postmenopausal women who do not apply HRT require calcium supplementation at the average level of 1500 mg/day, while women applying HRT require 1200mg/day. What also plays a significant part in the calcium balance is physical activity and protein consumption.

Calcium absorption is directly proportional to the amount of protein consumed as well as physical activity [2]. In our study group consumption of dairy products and fresh fruits and vegetables was satisfactory.

The frequency of indoor activities was also satisfactory – the majority of the surveyed population, as many as 95%, claimed they spend some time on outdoor activities everyday (approximately 15-30 minutes).

A family history of osteoporosis is connected with an increased risk of the disease occurrence. Femoral neck fractures in mothers under 50 increases the risk of the fracture in their daughters twice. Osteoporosis inheritance may be multifactorial, but some of its kinds can be connected with the vitamin D receptor gene. [2]

Estrogen deficiency or even drastic drop in its production due to surgical procedures (postmenopausal women can lose up to 50% of estrogen generation) causes the increased bone tissue resorption. The decreased level of estrogens leads to the intensification of bone resorption and the impairment of bone formation process, which results in the negative bone balance. What is also connected with the decrease in estrogens is the reduced intestinal absorption [4].

In our study 55% of the respondents were after the menopause. What is important 80% of the postmenopausal women ceased to menstruate as a result of the surgical intervention (hysterectomy or ovary removal).

What is of high significance in this respect is the frequency of gynecologist controls. 56% of the respondents visit the gynecologist regularly once a year, while 30% - irregularly once every second year or even more seldom. An alarming fact is the lack of specialist consultations in 14% of the subjects.

Coexisting illnesses account for another risk factor in osteoporosis. One of the illnesses increasing the risk of osteoporosis is hyperthyroidism, which can become the cause of osteoporotic lesions in bones as a result of the acceleration of bone tissue transformation by thyroid hormones. It also enhances the formation and resorption processes in the places of bone tissue reconstruction, while resorption is considerably intensified [3].

Primary hyperparathyroidism is connected with both osteoporosis and the accelerated bone tissue loss, especially in postmenopausal women due to the stimulating impact of PTH on the bone tissue turnover.

Inflammatory joint diseases, such as rheumatoid arthritis and rheumatoid spondylitis are concerned with the total or periarticular bone loss. Pathogenesis of osteoporosis in the case of these diseases is complex and involves the relative immobilization, the increased pro-inflammatory cytokine secretion, the increased blood flow through the periarticular tissues as well as the prolonged corticosteroid treatment.

Digestive tract diseases are also connected with the increased risk of osteoporosis. In this case, its pathogenesis is multifactorial and involves, among others, the impaired absorption of calcium, vitamin D and other nutritious substances, corticosteroid treatment, liver diseases as well as the increased pro-inflammatory cytokine secretion.

Hypogonadism is a major cause of osteoporosis in both sexes – it can have a physiological (as in postmenopausal women) or pathological character (in patients with hypophyseal diseases, Turner syndrome or anorexia nervosa) [3].

In the studied population only 15% of women did not suffer from prolonged diseases. The most frequent chronic diseases occurring in the remaining group are: cardiovascular diseases (37% of the respondents), osteoarticular diseases (24%), genital disorders (10%). The vast majority suffer from spinalgia – 65% of the women under survey, which significantly influences their physical activity.

This brings the necessity of systematic drug taking. The most frequently applied drugs affected cardiovascular system – 16%, antithrombotic drugs – 14%, drugs administered in

osteoarticular diseases: non-steroid anti-inflammatory drugs 80% and steroids – 10%. Drugs applied in the treatment of bronchial asthma – 2% and hormonal drugs – 2%. Antidiabetic drugs and insulin – 5% of the population under survey. Tranquillizers and anticonvulsant drugs – 3 %.

Conclusions

1. The majority of the women under survey use proper diet: 93% consume dairy, while 99% - eat fruit and vegetables.
2. One of the risk factors in osteoporosis are stimulants and addictions: 21% of the respondents are smokers (with a half of them smoking over 20 cigarettes a day).
3. Physical activity is strongly correlated with the occurrence of osteoporosis; spinalgia were an important cause of decreased physical activity among surveyed women.
4. Coexisting illnesses occur in the majority of the women (85%). The largest group – cardiovascular disease.
5. Menopause and problems connected with hormonal homeostasis are also the reasons for the development of osteoporosis. Women who menstruate irregularly or rarely account for 36% of the respondents, while 20% ceased to menstruate as a result of surgical hysterectomy or ovary removal.

References

1. Bara T, Synder M. Znaczenie osteoporozy w praktyce ortopedycznej. Prz. Menopauz 2003, 2 :62-67
2. Głuszko P. Osteoporoza – postępy 2013 Med. Prakt. 3014,3:37-43
3. Marczyński W, Górecki A. i wsp. Zasady profilaktyki, rozpoznawania osteoporotycznych złamań kości. Ortop Traumatol Rehabil 2007, 5 (6) : 548-554
4. Przedlacki J. Matuszkiewicz – Rowińska J. Udział czynników ryzyka złamań kości w algorytmie diagnostycznym osteoporozy Ter 2006, 3:11-16
5. Rajska – Neumann A. Osteoporoza – definicja, epidemiologia rozpoznawanie, leczenie i profilaktyka. Farm Współcz. 2008 1:47-53
6. Tkaczuk – Włach J, Sobstyl M, Jakiel G. Osteoporoza – obraz kliniczny, czynniki ryzyka i diagnostyka Prz. Menopauz 2010, 2:113-117