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

Attention paid to osteoporosis, the disease whose symptoms include 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 can be predicted. The results of the 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. 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.

The aim of the research was to evaluate the selected health-seeking behaviours and the level of knowledge of osteoporosis prevention among perimenopausal women. 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 from November 2002 to November 2003.

SURVEY RESULTS

The age structure of the female respondents was as follows: 37% of them were aged 40–50, 39% were aged 50–60, while 24% of the respondents were over 65. 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. The level of education was as follows: 44% 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, were 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.

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 = body mass in kg/ height in m(2). The risk of osteoporosis is inversely proportional to body mass – obesity protects against the disease (3). 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.

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). 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%).

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

Another factor that increases the risk of osteoporosis is also an excessive caffeine intake. On the basis of the survey 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 800 mg daily, caffeine does not have a negative influence on bone condition (50. The consumption of coffee among the respondents was high: 69% of the subjects admittted to drinking on a daily basis, including the majority drinking 1–2 cups a day.

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 indispensible 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 1200 mg/day. Physical activity and protein consumption also play a significant part in the calcium balance. Calcium absorption is directly proportional to the amount of protein consumed as well as physical activity (2). The frequency of dairy products consumption among the respondents was as follows: 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 in their diet.

Fruit and vegetable consumption, on the other hand, was satisfactory: 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.

The frequency of indoor activities was also satisfactory – the majority of the surveyed population, as many as 95%, claimed they spent time outdoors on a daily basis.

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 absence (postmenopausal women can lose up to 50%) of estrogens 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). The occurrence of the final menstruation was as follows: 55% of the respondents were after the menopause, including 1/3 who had their final menstruation before the age of 45. 80% of the postmenopausal women ceased to menstruate as a result of the surgical intervention

(hysterectomy or ovary removal). What is of 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 tiossue 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 genders – 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 population under survey only 15% of women did not suffer from prolonged diseases. The most frequent prolonged diseases occurring in the remaining group were: blood circulation diseases (37% of the respondents), osteoarticular diseases (24%), genital disorders (10%). The vast majority suffered from spinalgia – 65% of the women under survey, which significantly influenced their physical activity.

This brings the necessity of systematic drug taking. The most frequently applied drugs were connected with blood circulation 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 constituted 2% and hormonal drugs – 2%, antidiabetic drugs and insulin – 5% of the population under survey, whereas tranquillizers and anticonvulsant drugs – 3 %.

CONCLUSIONS

1. The majority of the women under survey use proper diet: 93% consume dairy products, while 99% eat fruit and vegetables.

2. One of the risk factors in osteoporosis are stimulants and addictions: 21% of the respondents are smokers (half of them smoke over 20 cigarettes a day).

3. Physical activity is strongly correlated with the occurrence of osteoporosis; spinalgia was an important cause of decreased physical activity among the women under survey.

4. Coexisting illnesses occur in the majority of the women (85%). The largest group was constituted by the women with blood circulation diseases and osteoarticular diseases, which is connected with drug taking.

5. Menopause and problems connected with hormonal balance disorders are also the reasons for the development of osteoporosis. Women who menstruated irregularly or rarely accounted for 36% of the respondents, while 20% ceased to menstruate as a result of surgical hysterectomy or ovary removal.

REFERENCES

1. Galus K.: Choroby metaboliczne kości. PZWL, Warszawa 1982.
2. Kulik R.: Wiadomości Położniczo-Ginekologiczne, 3, 25, 1999.
3. Rolston S.M.: Zapobieganie osteoporozie i jej leczenie. PWN, Warszawa 2002.
4. Skałba P.: Endokrynologia ginekologiczna. PZWL, Warszawa 1993.
5. Wernik-Szymankiewicz: Terapia, 10,150, 1997.
6. Widomska-Czekajska T. et al.: Przewodnik encyklopedyczny dla pielęgniarek. PZWL, Warszawa 1996.

SUMMARY

'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. The aim of the paper was to evaluate selected health-seeking behaviours as well as the knowledge of osteoporosis prevention rules in perimenopausal women. The survey questionnaire comprised 450 women aged 40–60. Survey results indicate inadequate 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, insufficient physical activity of the inquired as well as lack of systematic gynecological control connected with hormonal balance disorders (characteristic of the perimenopausal period). Conclusions: Inadequate knowledge of prevention and proper health-seeking behaviours contribute to the increase in the incidence of osteoporosis.

Ocena wybranych zachowań prozdrowotnych i profilaktyki osteoporozy wśród kobiet w okresie okołomenopauzalnym

„Osteoporoza jest uogólnioną chorobą metaboliczną kości, charakteryzującą się niską masą kostną, upośledzoną mikroarchitekturą tkanki kostnej, a w konsekwencji zwiększoną jej łamliwością i podatnością na złamania". Jest to współczesna, obecnie przyjęta definicja osteoporozy, podana przez grupę badawczą Światowej Organizacji Zdrowia. Ocenia się, że ze względu na wydłużenie życia ludzkiego liczba złamań może wzrosnąć trzykrotnie w ciągu 60 lat, szczególnie przy braku odpowiedniej strategii zapobiegania osteoporozie. Celem pracy jest ocena znajomości zasad profilaktyki osteoporozy wśród kobiet w okresie okołomenopauzalnym. Badaniem kwestionariuszem ankiety objęto 450 kobiet w wieku 40–60 lat. Wyniki badań wskazują na znaczny niedobór wiedzy i zachowań zdrowotnych wśród respondentek. Zwraca uwagę fakt bagatelizowania związku pomiędzy stosowaniem używek (palenia papierosów, picie kawy, alkoholu) a osteoporozą, zbyt niska aktywność fizyczna oraz brak systematycznej kontroli ginekologicznej ze względu na zaburzenia gospodarki hormonalnej (charakterystyczne dla okresu okołomenopauzalnego). Zatem brak dostatecznej wiedzy o profilaktyce i właściwych zachowaniach prozdrowotnych przyczynia się do wzrostu zachorowań na osteoporozę.