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Biologiczne i kulturowe uwarunkowania klimakterium u kobiet

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BIOLOGICAL AND CULTURAL ASPECTS OF FEMALE CLIMACTERIC

SUMMARY

Issues related to the climacteric in women are very popular among researchers. Despite vast literature devoted to various aspects of this phenomenon, the data are still incomplete. Most studies dealing with climacteric have been conducted among women from populations with high living standards, where the picture of natural menopause is distorted due to application of hormonal replacement therapy. There are no data that would allow to trace the course of the climacteric in women living in countries such as Poland where HRT is not widespread yet. Moreover, climacteric has not been a frequent research subject in Poland. The data that can be found in literature refer only to the age at which menopause occurs, and the data used in more extensive studies of the phenomenon are based on clinical cases. Clearly there is a need for populational studies, which having a cognitive value will also be a basis for the formulation of postulates dealing with prophylaxis and promotion of healthy lifestyle.

The hypothesis put forward in this work is as follows: menopause is a genetically determined and evolutionally preserved phenomenon, however the uniqueness of an individual course of biological phenomena resulting from the interaction of the genotype and environmental factors is a reason behind interindividual variation in the course of the climacteric and the age at which menopause occurs in women.

The above thesis is a premise for setting up the principal objective of the study, which is, finding out to what degree biological and cultural determinants differentiate the course of the climacteric and the age of menopause in women.

The main objective of the study has been accomplished by means of the following research tasks:

1. Determining the degree of individual variation in the reproductive period length according to:
   - the time of reproductive capacity onset, determined by age at menarche,
   - reproduction activeness (number of pregnancies, parity, i.e., number of births given),
   - the time of reproductive period termination, determined by age at menopause.

2. Assessment of interindividual variation in the age at menopause considering:
   - age at menarche,
   - duration of menstrual cycle,
   - duration of lactation,
   - reproductive activeness (number of pregnancies, parity, woman's age at first and last pregnancy),
   - state of health, lifestyle (tobacco smoking, physical activity, specified socio-economic conditions).

3. Description of variability of BMI and selected physiological parameters in women:
   - before and after menopause
   - in groups of women experiencing: natural menopause, hormonally controlled menopause and artificial menopause.

4. Assessment of the degree of intensity of climacteric symptoms according to:
   - the nature of menopause (natural, artificial, hormonally controlled menopause),
selected morphological parameters (body height and weight, and BMI),

- selected physiological parameters (systolic and diastolic blood pressure, level of blood glucose and total cholesterol),
- ailments related to the oncoming menstruation and its accompanying symptoms,
- state of health, lifestyle (tobacco smoking, physical activity, stress, specified socio-economic conditions).

The research strategy has been based on the cross-sectional studies combining three research approaches, which have made it possible to accomplish particular tasks and to attain the principal objective of the study:

1. Methodological approach:
   - conceptualisation of notions
   - evaluation of reliability and repeatability of the survey method
   - verification of statistical methods

2. Cognitive approach:
   - determining individual variation in the reproductive period duration
   - assessment of the influence of biological and cultural determinants on the age at menopause
   - determining interindividual differences in the course of climacteric in women

3. Application approach:
   - formulation of postulates dealing with prophylaxis and healthy lifestyle promotion.

The empirical basis for this work has been the material obtained from cross-sectional studies carried out in the years 1998 to 2000, among women living in the Wielkopolska region. The material included data on 2204 women aged from 35 to 65 years. The women who participated in the research varied with regard to age, education and socio-economic status. The survey was carried out using a questionnaire containing a number of questions referring to the reproductive period, climacteric symptoms, age at menopause and socio-economic conditions of the subjects. Further, the subjects' body height and weight were measured and based on the measurements their BMI was computed. Medical records were a source of data on physiological parameters.

An in-depth statistical analysis of the data gathered was performed. The analysis covered both parametric and non-parametric methods used, in line with their assumptions.

In accordance with the research objectives set the following results have been obtained:

1. Age at menopause varies according to the character of menopause. The probit mean of postmenopausal age for women who experienced natural menopause is 50.1 years. Artificial menopause occurs in women as many as four years earlier, while women who during perimenopausal period underwent hormonal therapy experience menopause two years later than those undergoing natural menopause (Tab. 13).

2. The potential period of female reproductive capacity varies according to the character of menopause. Average duration of the reproductive lifespan determined for women after natural
Menopause is 35 years (Tab. 14). Reproductive period determinants such as age at menarche and age at menopause have a significant effect on the variation in its duration (Fig. 15 and 16). However, results of observations indicate that the duration of potential reproductive capacity is much stronger modified by age at menopause.

3. Biological variables such as number of pregnancies and parity, reflecting reproductive activeness of the subjects have no effect on the variation in the individual duration of reproductive period (Tab. 17).

4. Studies of the influence of biological factors on the age at natural menopause show that the age varies according to the duration of the menstrual cycle (value of test $F = 155.19, p < 0.001$). It has been found that the longer the menstrual cycles experienced by women, the later the age at which these women reach menopause. Age at menarche (Fig. 19) and reproductive activeness of the women under study (Tab. 28) do not have an effect on the age at natural menopause. However, it has been observed that women who started to menstruate before the age of 12 and had the menstrual cycle shorter than 28 days experienced menopause at an earlier age. On the other hand, women with age at menarche of over 15 years and menstrual cycle longer than 32 days experienced menopause significantly later (Tab. 27).

5. No relationship has been found between the state of health, physical activity, manner of spending leisure and socio-economic status, and the age at natural menopause.

6. Smoking of cigarettes increases the risk of earlier menopause (value of test $F = 30.15, p < 0.001$). Non-smoking women experience menopause on average two years later than women who are habitual smokers (Tab. 33). Also the number of cigarettes smoked every day differentiated the age of menopause, accelerating its occurrence in women who smoked more than five cigarettes per day (value of test $F = 10.58, p < 0.001$).

7. Hormonal changes taking place in the climacteric bring about an increase in the BMI value (value of test $F = 90.21, p < 0.001$) and in total blood cholesterol (value of test $F = 43.84, p < 0.001$). It has also been noted that in women who at the perimenopausal period had undergone hormonal replacement therapy the changes in individual physiological parameters and the BMI were much milder.

8. Irrespective of the character of menopause, the most frequent climacteric symptoms are:

9. hot flashes, excessive perspiration and mood swings, though their intensity depends on the type of menopause. The most severe symptoms characteristic of this period were experienced by women whose menopause was a result of surgical intervention, while in women undergoing hormonal replacement therapy in the perimenopausal period, frequency of climacteric symptoms was decidedly lower (Fig. 24) compared to other groups (natural and artificial menopause).

10. The way in which climacteric symptoms are felt is related to selected morphological parameters (body weight, BMI) and physiological parameters (systolic blood pressure, total blood cholesterol). Higher values of these parameters result in greater intensity of climacteric symptoms such as hot flashes, profuse perspiration and sleep disorders (Tab. 57).

11. The intensity of climacteric symptoms is modified by the general state of health and the lifestyle (smoking, physical activity) of the subjects (Figs. 29-31). Non-smoking, physically active and healthy women suffer from less severe symptoms. It has also been observed that the way subjects perceived the ailments related to the perimenopausal period was related to their education. Women with lower level of education felt climacteric symptoms decidedly more often than women with secondary or university education (Tab. 61).
On the basis of the results obtained one can state that the factors having effect on age at menopause and on the course of the climacteric are strongly interrelated, which results in their aggregate action. The comprehensive approach has enabled us to reveal clear interrelations between age at menopause, the course of the climacteric and the factors under analysis. As a result the following final conclusions have been formulated:

1. Age at menopause does not depend on variables characterising reproductive period of women, with an exception of a tendency towards slightly later menopause in late maturating women with long menstruation cycles.
2. Nicotinism increases the risk of early menopause.
3. Living conditions and lifestyle have no effect on the variation in individual age at menopause.
4. The course of the climacteric in women varies according to their education and lifestyle.

Summing up, one can state that climacteric is a natural, genetically programmed physiological process, leading to the cessation of reproductive organs function and as a result to the termination of the reproductive lifespan in women.