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L.V. Pakhareenko

Assessment of Clinical Course Intensity of Premenstrual Syndrome

Ivano-Frankivsk National Medical University, Ivano-Frankivsk, Ukraine

Abstract. Premenstrual Syndrome (PMS) is one of the most common neuroendocrine disorders in gynecology. Diagnosis of this disease, which can completely cover the total clinical picture remains to be discussed. **The objective of the research** was to study the intensity of clinical manifestations in women with PMS.

Material and methods. The research included 200 women of reproductive age with diagnosis of PMS. Moos Menstrual Distress Questionnaire was used for diagnosis of this pathology. Control group consisted of 50 women without diagnosis of PMS.

Results of the research. We found differences in the spread and severity of symptoms of diseases between women with different clinical forms. The item "sensation of pain" was found to be the highest in patients with cephalgic and crisis forms and exceeded the indicator of healthy individuals, respectively, in 4.05 ($p < 0.001$) and 4.09 times ($p < 0.001$). The item "impaired concentration" was in 2.94 times ($p < 0.001$) higher in women with neuropsychical form compared with that of healthy women. The most severe "behavioral change" was determined in patients with cephalgic and crisis forms of PMS whose indices were in 3.31 times ($p < 0.001$) higher about the control. Item "vegetative reaction" in women with crisis and cephalgic forms was higher than in healthy women, respectively, in 4.27 ($p < 0.001$) and 3.42 times ($p < 0.001$). The most intense "fluid retention" was observed in patients with edematous form. The index of item "negative affect" was particularly severe in women with neuropsychical form, "activity disorder" in patients with crisis and cephalgic forms of PMS. Item "control" was typical only for women with crisis form, which increased in 4.84 times ($p < 0.001$) compared with healthy ones. Conclusions. Moos Menstrual Distress Questionnaire is the diagnostic method that allows to estimate not only the presence but also the intensity of the specific symptoms of PMS.

Keywords: *premenstrual syndrome, diagnostics, questionnaires.*

Problem statement and analysis of the recent researches

In International statistical classification of diseases and related health problems 10th revision "premenstrual tension syndrome" is located in chapter XIV "Diseases of the genitourinary system" in subcategory "Pain and other conditions associated with female genital organs and menstrual cycle" [8]. According to this classification the criteria of premenstrual syndrome (PMS) diagnosis include mild psychological discomfort, bloating or weight gain, breast tenderness, hands or feet swelling, different types of acne and pain, impaired concentration, sleep disturbances and changes in appetite. A specific point is that these symptoms occur in luteal phase of menstrual cycle and disappear with the beginning of menstruation. The presence of one of them is enough for PMS diagnosis. However, this classification does not specify the severity of symptoms, the degree of change in other phases of menstrual cycle, contains no criteria for differential diagnosis and exclusion criteria [5].

Today there are more than 150 symptoms of this neuroendocrine syndrome. It determines the presence of various diagnostic features and different classifications of PMS. Thus, based on the order #676 of Ministry of Health of Ukraine from 31.12.2004 according to clinical features and severity premenstrual disorders are divided into premenstrual symptoms, PMS proper, premenstrual dysphoric disorder and premenstrual magnification (atypical forms) [3]. Royal College of Obstetricians and Gynecologists, American College of Obstetricians and Gynecologists and other authoritative organizations propose their own classifications and determination of PMS. PMS is classified by severity, clinical course, the process of compensation and so on. For example, various diagnostic criteria indicate different prevalence and nature of the disease, allow to estimate the severity of the disease in different ways. Scientists are sure that PMS diagnosis is

based on survey and woman's registration of symptoms that appear in luteal phase of the menstrual cycle. Various questionnaires are used for this aim. Despite some drawbacks and various symptoms included, Moos Menstrual Distress Questionnaire can show rather exact structure of symptoms of this disease during menstrual cycle [6]. Some countries have developed their own versions of the questionnaires to determine PMS symptoms, for example, there is such German version as "Premenstrual Symptoms Screening Tool" [1]. Own versions of questionnaires exist in Iran [2], China [9]. When recording the symptoms, their fixation on observation day is important, however, it is not prospective, because it distorts and, in most cases, exaggerates the intensity of the clinical picture [4].

The purpose of the research was to estimate the intensity of clinical symptoms of PMS various forms.

Material and methods

The research included 200 women with PMS diagnosis who formed the main group. The control group consisted of 50 women without diagnosis of PMS. Verification of diagnosis was performed in accordance with Order # 676 of Ministry of Health of Ukraine from 31. 12. 2004 [3]. The diagnosis of PMS was made defining cyclical manifestations of disease in luteal phase of menstrual cycle on the basis of history taking and keeping patient's self-observation diary for 2-3 menstrual cycles (Moos Menstrual Distress Questionnaire). Moos Menstrual Distress Questionnaire consists of 8 items which contain 47 symptoms. The intensity of each symptom was scored from "1" to "6" points on the 25th day of the menstrual cycle. PMS form (edematous, neuropsychical, cephalgic, crisis) was determined according to V. P. Smetnik's classification [7].

The criteria for patients' inclusion into research were reproductive age, regular menstrual cycle, presence of PMS, written consent of the patient.

Exclusion criteria included pregnancy, lactation, menstrual cycle disorders, focal breast pathology, dysfunctional uterine bleeding of unknown etiology, acute inflammation of pelvic organs, tumors of uterus and ovaries of unknown etiology, endometrial hyperplasia, genital endometriosis, severe somatic pathology in the case history, organic pathology of central nervous system, mental illness, hormonal tumors, diabetes mellitus, adrenal diseases, malignant tumors in the present or in anamnesis, premenstrual dysphoric disorder, women who had taken psychotropic medications or hormonal therapy for the last 3 months.

Program Statistica 6.0 was used for statistical analysis. Nonparametric Mann-Whitney test was used to compare two independent groups by a single feature. The difference between the values that were compared were considered significant with $p < 0.05$.

Results of research and their discussion

In main group edematous form of the disease was diagnosed in 70 women, neuropsychical - in 72 women, cephalgic - in 33 women, crisis - 25 women. The average age of women in control and main groups were not statistically different and were respectively 28.82 ± 0.76 and 30.13 ± 0.36 years ($p = 0.08$). Menarche age coincided in two observed groups - 12.94 ± 0.13 and 12.86 ± 0.06 years and did not differ depending on PMS form ($p > 0.05$). Menstrual cycle disorders in case history as disorders of cycling had the same number of two groups of women, namely 26.00 %.

Analyzing the data of Moos Menstrual Distress Questionnaire we found that the component "pain sensations" was the most significant in patients with cephalgic and crisis PMS forms (Table 1). Its intensity exceeded healthy women indices respectively in 4.05 ($p < 0.001$) and 4.09 ($p < 0.001$) times and reached the level of "significant" manifestations. Headache and fatigue were the most significant symptoms of this component in patients with cephalgic form of the disease, the feeling of muscle tightness and widespread pain was observed in patients with the crisis form. The component "pain sensations" increased in 2.71 times ($p < 0.001$) in patients with edematous form of PMS in comparison with healthy individuals primarily due to the symptom "backache".

The "impaired concentration" component (insomnia, forgetfulness, confusion, loginess, difficulty concentrating, absent-minded behavior, lowered coordination of movements, traumatism) in patients with neuropsychiatric form of PMS was 2.94 times ($p < 0.001$) higher compared to healthy women and corresponded to "moderate" manifestations. This component was 2.34 ($p < 0.001$) and 2.43 times ($p < 0.001$) higher in women with cephalgic and crisis forms of PMS in comparison with the control group.

According to the results of our research the most significant "changes in behavior" manifesting in reduced activity during study and work, drowsiness, disability, decrease in social activity and efficiency were diagnosed in patients with cephalgic and crisis PMS forms. The indices were 3.31 times ($p < 0.001$) higher than in healthy women. Also, this component was 2.65 times higher in women with neuropsychical form of the disease in comparison with the controls ($p < 0.001$).

Table 1

Assessment of PMS different forms course according to Moos Menstrual Distress Questionnaire (points)

Scale Component	Groups of women				
	Control group, n=50	Edematous form, n=70	Neuropsychical form, n=72	Cephalgic form, n=33	Crisis form, n=25
Pain	1.22±0.08	3.31±0.14*	2.14±0.12*	4.94±0.12*	5.00±0.15*
Impaired concentration	1.40±0.10	2.51±0.12*	4.11±0.09*	3.27±0.14*	3.40±0.13*
Changes in Behavior	1.44±0.10	2.31±0.13*	3.81±0.11*	4.76±0.14*	4.76±0.12*
Autonomic reaction	1.18±0.07	1.80±0.13*	2.17±0.15*	4.03±0.21*	5.04±0.14*
Water retention	1.26±0.06	4.76±0.08*	2.25±0.13*	1.94±0.21°	1.96±0.18*
Negative affect	1.58±0.10	2.59±0.16*	4.81±0.09*	3.09±0.24*	4.00±0.16*
Incapacitation disorder	1.14±0.05	2.10±0.14*	3.75±0.10*	4.45±0.19*	4.52±0.14*
Control	1.00±0.00	1.04±0.02	1.32±0.08	1.24±0.12	4.84±0.16*

Note.

1. ° – probability indicator in comparison to control group ($p < 0.05$);
2. * – probability indicator in comparison to control group ($p < 0.001$).

“Autonomic reactions” were the most intensive in patients with crisis and cephalgic forms and exceeded control group indices by 4.27 ($p < 0.001$) and 3.42 times ($p < 0.001$) times. This component manifested in dizziness, faintness, cold sweating, and hot flashes in women with crisis form and in nausea and vomiting especially significant in cases of headaches in women with cephalgic form. Manifestations of “autonomic reactions” was “slightly noticeable” in patients with edematous and neuropsychical forms.

Patients with edematous form indicated high intensity “water retention” component. It was 3.78 times higher ($p < 0.001$) compared to the women in the control group. Individuals with other clinical forms of PMS stated “slightly noticeable” manifestations of this component, which occurred mostly due to mastalgia but not due to swelling and weight gain.

The index of “negative affect” component in women with neuropsychical form reached “significant” manifestations and exceeded the index of healthy persons by 3.04 times ($p < 0.001$). The main symptoms of this component in this group of patients included tearfulness, irritation and mood changes. Increase in “negative affect” component by 2.53 times ($p < 0.001$) was detected in patients with crisis form in comparison with healthy persons. The main symptoms included tension, anxiety, and restlessness.

The most significant “incapacitation disorder” was observed in patients with crisis and cephalgic forms of PMS. Their indices were 3.96 ($p < 0.001$) and 3.90 times higher ($p < 0.001$) compared to healthy women. “Control” component was typical only for patients with crisis form of PMS. It increased by 4.84 times ($p < 0.001$) compared to healthy women, reaching the level of “significant” manifestations. Persons with other clinical forms of PMS did not have any signs of this component.

Conclusions

Moos Menstrual Distress Questionnaire is diagnostic method allowing to estimate not only the presence but also the intensity of certain symptom. Such components as “pain”, “behavioral change”, “autonomic reactions” and “incapacitation disorder” were the most significant in patients with cephalgic and crisis forms of PMS. Such components as “impaired concentration” and “negative affect” were typical for women with neuropsychical form of disease; “water retention” component was typical for women with edematous form.

Prospects for further research involve the development of individual therapy for patients with PMS depending on the presence and severity of specific symptoms.

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