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Features of Reproductive Function in Women With Premenstrual Syndrome

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The objective: **of research is to evaluate course of pregnancy and labor in women with premenstrual syndrome (PMS).**
***Patients and methods*. The research included 200 women of reproductive age with diagnosis of PMS and 50 women without diagnosis of PMS. Data of reproductive and obstetrical history were collected.**
***Results*. We determined that women with PMS have more pregnancies (in 1,59 times, χ^2=10,74, p=0,001) and labors (in 1,70 times, χ^2=10,56, p=0,001) compared with controls. Also they have a tendency for development of pathological course of pregnancy and labor. Complications of pregnancy and labor are the most typical for patients with edematous form of syndrome compared with healthy individuals (χ^2=4,71, p=0,03, OR=3,92, 95%CI=1,27–12,06, p=0,02). These persons have a greater share of late gestosis – in 4,55 times significantly greater incidences – 47,82% versus 10,52% of women in control group (χ^2=6,51, p=0,01, OR=7,79, 95%CI=1,61–37,65, p=0,01).**
***Conclusion*. Special attention should be paid to women with edematous form of PMS, which are significantly more marked the development of late gestosis. These women are at risk of pathological labor – caesarean section, forceps, hypotonic/atonic postpartum uterine bleeding and preterm labor.**
Key words: *premenstrual syndrome, pregnancy, labor, complications.*

Premenstrual syndrome (PMS) is neuroendocrine disorder which occurs up to 95% of women in reproductive age [9]. There are more than 150 physical and psychological symptoms of this syndrome which appear in luteal phase of menstrual cycle. Numerous scientific studies suggest the influence of PMS on decline of woman's life quality, relations in family and with others people, reduction of daily and social activities [5, 8]. Several groups of factors that can lead to development of PMS – social, health and genetic backgrounds. Risk factors include: caucasian ethnicity, living in large industrial and administrative centers, intellectual occupation, late reproductive age, the presence of stress, frequent pregnancy or lack of them, the presence of PMS in twin sister, the availability of abortions, postpartum depression, inflammatory diseases of the genital organs, neuroinfections, traumatic brain injury, neuro-metabolic diseases, and others [3, 12]. Reproductive function in women with PMS is not studied enough. Information about it is contradictory often.

The objective: to evaluate course of pregnancy and labor in women with PMS.

PATIENTS AND METHODS

The research included 200 women with diagnosis of PMS who formed basic 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 [1]. The diagnosis of PMS was exhibited by presence of 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 (R. Moos' Menstrual Distress Questionnaire). Form of PMS (edematous, neuropsychical, cephalgic, crisis) was determined according to V.P. Smetnik's classification [2]. Obstetrical anamnesis was analyzed in both groups.

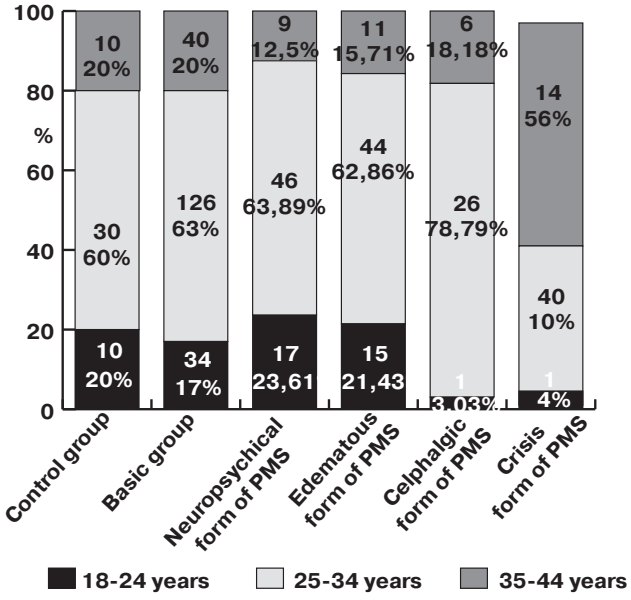
Inclusion criteria: reproductive age (18–44 years), regular menstrual cycle, presence of PMS, written consent of the patient.

Exclusion criteria: pregnancy, lactation, disorders of menstrual cycle, focal lesions of breast, dysfunctional uterine bleeding of unknown etiology, acute inflammation of pelvic organs, tumors of uterus and ovaries of unknown etiology, hyperplastic processes of endometrium, genital endometriosis, severe somatic pathology in the history (cardiovascular, urinary, digestive, respiratory diseases, blood disorders), organic pathology of central nervous system, mental illness, hormonal tumors, diabetes, adrenal diseases, malignant tumors in the present or in anamnesis, premenstrual dysphoric disorder, women who took psychotropic medications or hormonal therapy within the last three months.

For statistical analysis we used program Statistica 6.0. To compare two independent groups by single feature we used the nonparametric Mann–Whitney test. We also calculated criterion χ^2, Odds Ratio (OR) and Confidence Interval (CI). The difference between the values comparing considered reliable at $p<0.05$.

RESULTS OF RESEARCH AND DISCUSSION

In basic group 72 patients had neuropsychical form of PMS, 70 persons – edematous form, 33 – cephalgic and 25 – crisis one. Average age of women in control group was



Age structure of women

Table 1

Reproductive function, abs. (%)

Reproductive indices	Controls, n=50	Basic group				
		Neuropsychical form, n=72	Edematous form, n=70	Cephalgic form, n=33	Crisis form, n=25	Total, n=200
Women who had no pregnancies	28 (56,00)	21 (29,17)	20 (28,57)	9 (27,27)	10 (40,00)	60 (30,00)
Pregnancy, total: – one – two – three and more	22 (44,00) 14 (28,00) 3 (6,00) 5 (10,00)	51 (70,83) 24 (33,33) 15 (20,83) 12 (16,67)	50 (71,43) 19 (27,14) 23 (32,86) 8 (11,43)	24 (72,72) 8 (24,24) 10 (30,30) 6 (18,18)	15 (60,00) 6 (24,00) 3 (12,00) 6 (24,00)	140 (70,00) 57 (28,50) 51 (25,50) 32 (16,00)
Women who were pregnant but didn't deliver	3 (6,00)	5 (6,94)	4 (5,71)	1 (3,03)	1 (4,00)	11 (10,50)
Labors, total: – one – two – three	19 (38,00) 14 (28,00) 4 (8,00) 1 (2,00)	46 (63,89) 28 (38,89) 18 (25,00) -	46 (65,71) 25 (35,71) 20 (28,57) 1 (1,43)	23 (69,69) 10 (30,30) 13 (39,39) -	14 (56,00) 6 (24,00) 6 (24,00) 2 (8,00)	129 (64,50) 69 (34,50) 57 (28,50) 3 (1,50)
Artificial abortions	6 (12,00)	12 (16,67)	10 (14,29)	7 (21,21)	5 (20,00)	34 (17,00)
Missed pregnancy	1 (2,00)	1 (1,39)	-	-	-	1 (0,50)
Ectopic pregnancy	2 (4,00)	2 (2,78)	2 (2,86)	-	1 (4,00)	5 (2,50)
Spontaneous abortions	1 (2,00)	6 (8,33)	6 (8,57)	-	-	12 (6,00)

Table 2

Pregnancy complications, abs. (%)

Complications	Controls, n=19	Basic group				
		Neuropsychical form, n=46	Edematous form, n=46	Cephalgic form, n=23	Crisis form, n=14	Total, n=129
Complicated pregnancies	14 (73,68)	41 (89,13)	41 (89,13)	21 (91,30)	12 (85,71)	115 (89,15)
Gestosis, total	7 (36,84)	24 (52,17)	32 (69,57)	11 (47,83)	6 (42,86)	73 (56,59)
Early gestosis	5 (26,32)	14 (30,43)	10 (21,74)	5 (21,74)	3 (21,43)	32 (24,81)
Late gestosis, total:	2 (10,52)	10 (21,73)	22 (47,82)	6 (26,09)	3 (21,42)	41 (31,78)
– mild preeclampsia	1 (5,26)	1 (2,17)	4 (8,70)	1 (4,35)	-	6 (4,65)
– middle/severe preeclampsia	-	1 (2,17)	1 (2,17)	1 (4,35)	1 (7,14)	4 (3,10)
– mild preeclampsia and early gestosis	-	3 (6,52)	11 (23,91)	2 (8,69)	1 (7,14)	17 (13,18)
– middle/severe preeclampsia and early gestosis	-	1 (2,17)	1 (2,17)	-	-	2 (1,55)
– gestative o edema	1 (5,26)	2 (4,35)	4 (8,70)	1 (4,35)	-	7 (5,43)
– hestative hypertension	-	2 (4,35)	1 (2,17)	1 (4,35)	1 (7,14)	5 (3,87)
Threatened labor	10 (52,63)	33 (71,74)	29 (63,04)	16 (69,57)	10 (71,43)	88 (68,22)

28,82±0,76 years, in basic one – 30,13±0,36 years (p=0,08). In both groups women of active reproductive age (25–35 years) consisted the larger part among all patients – 60,00% of controls and 63,00% women with PMS (fig). However, number of patients aged 18–24 years old with cephalgic and crisis forms of PMS were, respectively, in 6,60 (χ^2=3,61, p=0,057, OR=0,13, 95%CI=0,02–1,03, p=0,053) and 5,00 times less (χ^2=2,25, p=0,13, OR=0,17, 95%CI=0,02–1,38, p=0,09) than among healthy individuals of similar age. Quantity of persons in late reproductive age (35–44 years) was set in 2,80 times more among patients with crisis form of syndrome than among control group (χ^2=8,34, p=0,004, OR=5,09, 95%CI=1,78–14,56, p=0,002).

Body mass index (BMI) in women of control group was 22,48±0,45. In women of basic group it was greater on 6,81% versus the estimate of healthy individuals – 24,01±0,23 (p<0,001) but it remained in normal ranges. It was noted that patients with edematous form had BMI significantly higher than the value of healthy individuals on 15,35% and amounted to 25,93±0,46 (p<0,001). BMI of patients with neuropsychical, cephalgic and crisis forms of the disease was slightly more than in controls – respectively 22,93±0,28, 23,12±0,44 and 22,93±0,39 (p>0,05).

Also, women with PMS had some peculiarities of reproductive function. Results of our study do not allow to confirm the data on the same frequency of pregnancies and labors between females with and without PMS [5]. But we agree that complicated labors are more common in patients with this syndrome. Thus, we determined that persons with PMS were characterized by high frequency of pregnancies (70,00%) and labor (64,50%) relative to healthy women (44,00% and 38,00%) – respectively in 1,59 times (χ^2=10,74, p=0,001, OR=2,97, 95%CI=1,57–5,60, p<0,001) and 1,70 times more (χ^2=10,56, p=0,001, OR=2,96, 95%CI=1,56–5,62, p<0,001, table 1). Equal number of women in control and basic groups had only one pregnancy (28,00% and 28,50%, respectively). The similarity between two groups is also in fact that almost equal part of primigravidas did not have children because of missed abortion, ectopic pregnancy or miscarriage (respectively 6,00% and 10,50%) and in the same number of artificial abortions.

The course of pregnancy was complicated in women in both groups (table 2). Given into attention that pregnancies were interrupted in some individuals (see above mentioned), we performed calculations of pregnancy complications of number of women who had labors. Complications of pregnancy rates were set in the vast majority of persons with PMS (89,15%) and healthy individuals (73,68%). Among the complications gestosis should be noted. Their prevalence in persons with PMS was not significantly greater compared with healthy women (56,59% vs. 36,84%, p>0,05). But in patients with edematous form of the disease this figure was statistically higher in 1,89 times more compared with controls and amounted to 69,57% (χ^2=4,71, p=0,03, OR=3,92, 95%CI=1,27–12,06, p=0,02). A tendency to a greater share of late gestosis among patients was determined in basic group – in 3,02 times higher compared to healthy persons (χ^2=2,67, p=0,10, OR=3,96, 95%CI=0,87–17,95, p=0,07). However, only among women with edematous form of PMS had in 4,55 times significantly greater incidences of late gestosis – 47,82% versus 10,52% of women in control group (χ^2=6,51, p=0,01, OR=7,79, 95%CI=1,61–37,65, p=0.01).

Frequency of pathological labor – caesarean section, forceps, abnormal attachment of placenta, uterine bleeding ascertained in 33,33% of patients with PMS versus 21,05% in the control group. And the frequency of pathological labor in women with edematous form was the largest – 41,30%. In this group of persons the main reasons of preterm delivery and cesarean section, forceps delivery were hypertensive disorders during pregnancy – late gestosis. In control group late gestosis were not reasons of pathological or premature labors. The main causes of pathological labor in this group were fetal distress, abnormal uterine activity without effective medical correction, reason of premature labor – premature amnion rupture.

Thus, such results allow us to suggest that metabolic pathogenetic mechanisms of edematous form of PMS are similar to those that underlie the development of late gestosis and/or can lead to them. This can indicate that one of such joint baseline predictors of these pathologies is fact of increasing BMI in the genesis of gestosis of second half of pregnancy [6, 10] and PMS as well [4]. The results of our study also noted increased BMI, which was typical only for edematous form of the syndrome. So we assume the value of the edematous form of PMS as a risk factor of occurrence of late gestosis.

Studying the possible link to other features of the obstetric history or obstetric pathology with the presence of PMS and its manifestations is limited due to the lack of scientific publications. The exception is postpartum depression, which is associated with the presence of the syndrome [7, 11]. According to our research there is a trend towards higher incidence of postpartum depression in this group of women. The spread of this disease in patients with PMS were slightly higher (14,73%) relative to healthy subjects (10,53%). Noteworthy is the fact that individuals with PMS is much harder and longer tolerated this state (from two till six months) compared with control group (from two weeks till one month). This link between PMS and postnatal depression may indicate on hormonal aspects of the last one.

CONCLUSIONS

In spite of the same age, women with PMS have more pregnancies and labors (p=0,001). Persons with PMS have a tendency to develop pathological course of pregnancy and labor. Special attention should be paid to women with edematous form of disease, which were significantly more marked the development of late gestosis compared with healthy individuals (p=0,03). These women are at risk of pathological labor – caesarean section, forceps, hypotonic/atonic postpartum uterine bleeding and preterm labor.

Особенности репродуктивной функции у женщин с предменструальным синдромом

Л.В. Пахаренко

Цель исследования: оценить течение беременности и родов у женщин с предменструальным синдромом (ПМС).

Материалы и методы. В исследование были включены 200 женщин репродуктивного возраста с диагнозом ПМС и 50 женщин без диагноза ПМС. Проанализированы данные репродуктивного и акушерского анамнеза.

Результаты. Установлено, что женщины с ПМС имеют большее количество беременностей (в 1,59 раза, χ^2=10,74, p=0,001) и родов (в 1,70 раза, χ^2=10,56, p=0,001) по сравнению с контрольной группой. Кроме того, у них отмечается тенденция к развитию патологического течения беременности и родов. Осложнения беременности и родов являются наиболее типичными для больных с отечной формой синдрома по сравнению со здоровыми лицами (χ^2=4,71, p=0,03, OR=3,92, 95%CI=1,27–12,06, p=0,02). У данной категории пациентов констатировано большую в 4,55 раза частоту позднего гестоза – 47,82% против 10,52% у женщин контрольной группы (χ^2=6,51, p=0,01, OR=7,79, 95%CI=1,61–37,65, p=0,01).

Заключение. Особое внимание следует уделять женщинам с отечной формой заболевания, которые более подвержены развитию позднего гестоза, а также соответственно риску патологических родов – кесарева сечения, щипцов, гипотонических/атонических послеродовых маточных кровотечений и преждевременных родов.

Ключевые слова: *предменструальный синдром, беременность, роды, осложнения.*

Особливості репродуктивної функції у жінок з передменструальним синдромом

Л.В. Пахаренко

Мета дослідження: оцінити перебіг вагітності і пологів у жінок з передменструальним синдромом (ПМС).

Матеріали та методи. У дослідження були включені 200 жінок репродуктивного віку з діагнозом ПМС і 50 жінок без діагнозу ПМС. Проаналізовано дані репродуктивного та акушерського анамнезу.

Результати. Встановлено, що жінки з ПМС мають більшу кількість вагітностей (в 1,59 разу, χ^2=10,74, p=0,001) та пологів (в 1,70 разу, χ^2=10,56, p=0,001) у порівнянні з контрольною групою. Крім того, у них відзначається тенденція до розвитку патологічного перебігу вагітності та пологів. Ускладнення вагітності та пологів є найбільш типовими для хворих з набряклою формою синдрому у порівнянні зі здоровими особами (χ^2=4,71, p=0,03, OR=3,92, 95%CI=1,27–12,06, p=0,02). У даній категорії пацієнтів констатовано більшу в 4,55 разу частоту пізнього гестозу – 47,82% проти 10,52% у жінок контрольної групи (χ^2=6,51, p=0,01, OR=7,79, 95%CI=1,61–37,65, p=0,01).

Заключення. Особливу увагу слід приділяти жінкам з набряклою формою захворювання, які мають більшу схильність до розвитку пізнього гестозу, а також відповідно ризику патологічних пологів – кесарева розтину, щипців, гіпотонічних/атонічних післяпологових маткових кровотеч та передчасних пологів.

Ключові слова: *передменструальний синдром, вагітність, пологи, ускладнення.*

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