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Pregnancy and labor in women with premenstrual syndrome

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ABSTRACT

200 women of reproductive age with diagnosis premenstrual syndrome (PMS) and 50 women without PMS were referred to study. Obstetrical anamnesis was analyzed in both groups. We determined that women with PMS have more pregnancies and labors. Also they have a tendency for development of pathological course of pregnancy and labor. Special attention should be paid to women with edematous form of the disease, which were significantly more marked the development of late gestosis compared with healthy women. These women are at risk of pathological labor - caesarean section, forceps, hypotonic/atonic postpartum uterine bleeding and preterm labor.

Keywords: Premenstrual syndrome, pregnancy, labor, complications.

1. Introduction

Premenstrual syndrome (PMS) is neuroendocrine disorder which occurs up to 95% of women in reproductive age [7]. 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 to decline woman's life quality, relations in family and with others people, reduction of daily and social activities [4, 5, 6]. Medical as well as social factors can lead to development of PMS. Among them we can mention features of female reproductive function. These include late reproductive age, frequent pregnancies or absence of them, presence of spontaneous or artificial abortions, inflammatory diseases of the female genital organs and so on [3, 8].

Aim of the study was to evaluate features of pregnancy and labor in women with PMS.

2. Material 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 the diagnosis was performed in accordance with the existing status of the Order of the Ministry of Health of Ukraine № 676 from 31. 12. 2004 [1]. PMS was diagnosed by presence of cyclical manifestations of disease in the luteal phase of menstrual cycle on the basis of history taking and keeping of patient self-observation diary for 2-3 menstrual cycles (Menstrual Distress Questionnaire, R. Moos). Form of PMS (edematous, neuropsychical, cephalgic, crisis) was determined according to V. P. Smetnik's classification [2].

The criteria for inclusion of patients in basic group were: reproductive age (18-44 years), regular menstrual cycle, the presence of PMS, written consent of the patient.

Exclusion criteria were women who at the time of the study were pregnant or had lactation, women with disorders of menstrual cycle, focal breast pathology, dysfunctional uterine bleeding of unknown etiology, acute inflammation of the pelvic organs, tumors of the uterus and ovaries of unknown etiology, endometrial hyperplasia, endometriosis, severe somatic pathology in history (cardiovascular, urinary, digestive, respiratory systems, blood disorders), organic pathology of the central nervous system, mental illness, hormonal tumors, diabetes, adrenal disease, malignant processes at present time or in past, premenstrual dysphoric disorder, women who took psychotropic medications or hormonal therapy in the last 3 months.

For statistical analysis we used χ^2 test (program Statistica 6.0) and odds ratio (Odds Ratio, OR), CI (Confidence Interval, CI).

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3. Results and Discussion

In basic group edematous form of the disease was diagnosed in 70 women, neuropsychical – 72, cephalgic – 33, crisis – 25. The average age of women in control and basic groups were not statistically different and were respectively 28.82 ± 0.76 and 30.13 ± 0.36 years ($p = 0,08$). We made detailed analysis of obstetrical anamnesis in observed women (table 1). Only 22 women (44.0%) in control group had a history of pregnancy, which was 1.59 times lower than in basic group – 140 women (70.0%; $\chi^2=10.74$ $p=0.001$, $OR=2.96$, 95% CI 1.57-5.60, $p<0.001$). The same number in women in both research groups had only one pregnancy (28.0% and 28.5%,

respectively). The similarity of the two groups lies in the fact that an equal amount of women who have been pregnant but did not have children because of interruption of gestation in early terms (missed abortion, ectopic pregnancy or miscarriage) – respectively 6.0% and 5.5% of primipara women. Also, there were no significant differences in the amount of artificial abortions, missed abortions, ectopic pregnancies and miscarriages. Noteworthy is the fact that women with PMS had a greater number of labors - 64.5% versus 38.0% in control group ($\chi^2=10.56$, $p=0.001$, $OR=2.96$, 95% CI 1.56-5.62, $p<0.001$).

Table 1: Reproductive Features in Observed Women, n (%).

Reproductive index	Groups					
	Control group, n=50	Basic group				
		Edematous form, n=70	Neuropsychical form, n=72	Cephalgic form, n=33	Crisis form, n=25	Total, n=200
Women who had no pregnancies	28 (56.00)	20 (28.57)	21 (29.17)	9 (27.27)	10 (40.00)	60 (30.00)
1 pregnancy	14 (28.00)	19 (27.14)	24 (33.33)	8 (24.24)	6 (24.00)	57 (28.50)
2 pregnancies	3 (6.00)	23 (32.86)	15 (20.83)	10 (30.30)	3 (12.00)	51 (25.50)
3 and more pregnancies	5 (10.00)	8 (11.43)	12 (16.67)	6 (18.18)	6 (24.00)	32 (16.00)
Total number of pregnant women	22 (44.00)	50 (71.43)	51 (70.83)	24 (72.73)	15 (60.00)	140 (70.00)
Women who have been pregnant but didn't delivered	3 (6.00)	4 (5.71)	5 (6.94)	1 (3.03)	1 (4.00)	11 (5.50)
Total number of women who had labors:						
-1 labor	19 (38.00)	46 (65.71)	46 (63.89)	23 (69.69)	14 (56.00)	129 (64.50)
-2 labors	14 (28.00)	25 (35.71)	28 (38.89)	10 (30.30)	6 (24.00)	69 (34.50)
-3 labors	4 (8.00)	20 (28.57)	18 (25.00)	13 (39.39)	6 (24.00)	57 (28.50)
	1 (2.00)	1 (1.43)	-	-	2 (8.00)	3 (1.50)
Artificial abortions	6 (12.00)	10 (14.29)	12 (16.67)	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 (2.86)	2 (2.78)	-	1 (4.00)	5 (2.50)
Spontaneous abortion	1 (2.00)	6 (8.57)	6 (8.33)	-	-	12 (6.00)

Women in both groups had complications during pregnancy. Given that in some women pregnancy was interrupted in the early terms (see above) we made calculation of pregnancy and labor complications based on the following amounts: control group – 19 women, basic group – 129 (46 women with edematous form of PMS, 46 – neuropsychical form, 23 – cephalgic form, 14 – crisis, table 2). A great frequency of complicated pregnancy was in both groups: control one – 68.42% and basic group – 73.64%. In most of the cases women had two and more complications during pregnancy. The highest frequency among complications were gestosis. 73 (56.59%) of women with PMS had gestosis which was

1.54 times more than in women without PMS – 36.84% ($\chi^2=1.87$, $p=0.17$, $OR=2.23$, 95% CI 0.83-6.04, $p=0.11$). In a group with edematous form of PMS this index was the most – 69.57%, which was higher in the 1.89 times compared with control group ($\chi^2=4.71$, $p=0.03$, $OR=3.92$, 95% CI 1.27-12.06, $p=0.02$). Late gestosis in women with PMS (47.83%) met 3.02 times more than in controls ($\chi^2=2.67$, $p=0.10$, $OR=3.96$, 95% CI 0.87-17.95, $p=0.07$). This tendency was formed mainly by patients with edematous form of PMS – 47.83% ($\chi^2=6.51$, $p=0.01$, $OR=7.79$, 95% CI 1.61-37.65, $p=0.01$) versus 10.52% of the women in control group.

Table 2: Complications during Pregnancies in Observed Women, n (%).

Complications of pregnancy	Groups					
	Control group, n=19	Basic group				Total, n=129
		Edematous form, n=46	Neuropsychical form, n=46	Cephalgic form, n=23	Crisis form, n=14	
Gestosis, total:	7 (36.84)	32 (69.57)	24 (52.17)	11 (47.83)	6 (42.86)	73 (56.59)
A. Early gestosis	5 (26.32)	10 (21.74)	14 (30.43)	5 (21.74)	3 (21.43)	32 (24.81)
B. Late gestosis:	2 (10.52)	22 (47.83)	10 (21.74)	6 (26.09)	3 (21.43)	41 (31.78)
- mild preeclampsia	1 (5.26)	4 (8.70)	1 (2.17)	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	-	8 (17.39)	3 (6.52)	2 (8.69)	1 (7.14)	14 (10.85)
- middle/severe preeclampsia and early gestosis	-	4 (8.70)	1 (2.17)	-	-	5 (3.88)
- gestative edema	1 (5.26)	4 (8.70)	2 (4.35)	1 (4.35)	-	7 (5.42)
- gestative hypertension	-	1 (2.17)	2 (4.35)	1 (4.35)	1 (7.14)	5 (3.87)
Threatened of pregnancy interruption (miscarriage, preterm labor)	10 (52.63)	25 (54.35)	27 (58.70)	13 (56.52)	7 (50.00)	69 (53.49)
Total number of women with complicated pregnancies	13 (68.42)	35 (76.09)	33 (71.74)	17 (73.91)	10 (71.43)	95 (73.64)

Thus, in control group early gestosis dominated and gestosis ratio early/late gestosis was 2.50. In contrast, women with PMS, we have established the predominance of late gestosis, and this ratio was 0.78.

Also women with PMS had more complications in labors compares with controls (table 3). In basic group we determined a higher incidence of pathological course of labors - cesarean section, forceps, abnormal attachment of placenta, uterine bleeding – 33.33% versus 21.05% in control group, although these differences were not statistically significant ($\chi^2=0.66$ p=0.42, OR=1.88, 95% CI 0.59-5.99, p=0.29). It should be noted that this index was also formed mainly by patients with edematous form of PMS in which it was significantly more than 1.96 times and amounted to 41.30% ($\chi^2=1.61$, p=0.20, OR=2.64, 95% CI 0.76-9.21, p=0.13). Patients with this form of PMS also

noted a 2.48-fold higher percentage of preterm labor than in control group ($\chi^2=0.23$, p=0.63, OR=1.43, 95% CI 0.49-4.17, p=0.52). Noteworthy is the fact that hypertensive disorders during pregnancy – late gestosis – were the main reason of preterm labors as well as cesarean section, forceps delivery in patients with edematous form of PMS. 19 women in this group had pathological labors. Late gestosis complicated pregnancies in 13 (68.42 %) of such cases, and in 5 (26.31%) cases of them led to preterm labors resulted in caesarean section due to the progression of preeclampsia. 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.

Table 3: Complications in Labors in Observed Women, n (%).

Complications	Groups					
	Control group, n=19	Basic group				Total, n=129
		Edematous form, n=46	Neuropsychical form, n=46	Cephalgic form, n=23	Crisis form, n=14	
Abnormalities of uterine activity	5 (26.32)	19 (41.30)	15 (32.61)	7 (30.43)	3(21.43)	44 (34.11)
Pathological labors:	4 (21.05)	19 (41.30)	15 (32.61)	5 (21.74)	4 (28.57)	43 (33.33)
- forceps	1 (5.26)	3 (6.52)	2 (4.35)	1 (4.35)	-	6 (4.65)
- cesarean section	3 (15.79)	13 (28.26)	11 (23.91)	4 (17.39)	3 (21.43)	31 (24.03)
- abnormal attachment of placenta	-	-	-	-	1 (7.14)	1 (0.78)
- bleeding in III period of labor or postpartum	-	3 (6.52)	2 (4.35)	-	-	5 (3.87)
Preterm labor	1 (5.26)	6 (13.04)	4 (8.70)	1 (4.35)	1 (7.14)	12 (9.30)

4. Conclusions

In spite of the same age, women with PMS have more pregnancies and labors ($p=0.001$). Women with PMS have a tendency to develop pathological course of pregnancy and labor. Special attention should be paid to women with edematous form of the disease, which were significantly more marked the development of late gestosis ($p=0.03$) compared with healthy women. These women are at risk of pathological labor - caesarean section, forceps, hypotonic/atonic postpartum uterine bleeding and preterm labor.

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