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## PHYSICAL AND PSYCHO-EMOTIONAL DISORDERS IN WOMEN WITH POSTPARTUM COMPLICATIONS

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In terms of prevalence, one of the leading places in the structure of gynecological morbidity is occupied by postpartum complications. The aim was to study the quality of life in women with early postpartum complications. 150 puerperae were divided into two groups: the main group – women with puerperal complications (n=100) aged  $29.9 \pm 0.64$ , the comparison group – puerperae with the physiological course of the postpartum period (n=50) at the age of  $30.3 \pm 0.86$  years ( $p=0.679$ ). In puerperae data of the SF-36 quality of life questionnaire were obtained. Indicators revealed a significant decrease in the values on the scale “Physical functioning” in the main group, compared with the control group ( $63.3 \pm 0.80$  and  $82.3 \pm 0.86$ , respectively;  $p=0.0001$ ) and statistically significant decrease in indicators on the “Mental Health” (MH) scale in the main group –  $69.6 \pm 0.64$ , versus  $77.8 \pm 1.03$  in the control group ( $p=0.0001$ ). Thus, women with early postpartum complications are characterized by an increase in restrictions in the performance of physical activity and a pronounced deterioration in the psycho-emotional state.

**Key words:** postpartum period, complications, risk factors, quality of life, questionnaire SF-36

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## ФІЗИЧНІ ТА ПСИХОЕМОЦІОНАЛЬНІ РОЗЛАДИ У ЖІНОК НА ФОНІ ПОСЛЯПОЛОГОВИХ УСКЛАДНЕНЬ

За рівнем поширеності одне з лідируючих місць у структурі гінекологічної захворюваності займають післяпологові ускладнення. Метою дослідження було вивчення якості життя у жінок з ранніми післяпологовими ускладненнями. 150 породіль були розділені на дві групи: основна – породилі з пuerперальними ускладненнями (n=100) у віці  $29,9 \pm 0,64$  років, група порівняння – породилі з фізіологічним перебігом післяпологового періоду (n=50) у віці  $30,3 \pm 0,86$  років ( $p=0,679$ ). У породіль був вивчений анамнез та отримані дані щодо опитувальника якості життя SF-36. Було виявлено суттєве зниження значень за шкалою «Фізичне функціонування» в основній групі порівняно з контрольною групою ( $63,3 \pm 0,80$  та  $82,3 \pm 0,86$ , відповідно;  $p=0,0001$ ), а також статистично значуще зниження показників за шкалою «Психічне здоров'я» (MH) в основній групі –  $69,6 \pm 0,64$ , проти  $77,8 \pm 1,03$  у групі контролю ( $p=0,0001$ ). Отже, у породіль із ранніми післяпологовими ускладненнями відзначається зниження якості життя: обмеження у виконанні фізичних навантажень та виражене погіршення психоемоційного стану.

**Ключові слова:** післяпологовий період, ускладнення, фактори ризику, якість життя, опитувальник SF-36

Postpartum complications, due to which there is often an increase in the number of unplanned women of reproductive age hospitalized in the gynecological departments of hospitals, occupy not the last place in the structure of gynecological diseases. There is still an open question about the development of an optimal diagnostic algorithm and a model of effective therapeutic and preventive measures with early detection of the most significant risk factors for the development of acute and chronic forms of this pathology. As one of the important indicators of the effectiveness of comprehensive medical and psychological care in perinatal medicine, the integral characteristic of the physical, psycho-emotional and social functioning of a person is considered [8, 9]. Thus, the assessment of a woman's quality of life at various stages of pregnancy and in the postpartum period allows us to trace the state of her health in the above aspects [5, 6].

The analysis of the world literature gives grounds to assert that women experience negative emotional manifestations during pregnancy, especially in its third trimester, and the process of childbirth itself, as the most stressful, has a significant impact on the quality of life in the early and late postpartum period [7, 12]. It should be pointed out that somatic pathology, especially of infectious and allergic genesis, leads to autoimmune disorders and creates favorable conditions for the development of the inflammatory process in the pelvic organs. Frequent ignoring of common postpartum health problems and the lack of proper attention to women with postpartum inflammatory complications in this regard can negatively affect the physical and psychological health of mothers and the well-being of their infants [3].

Thus, on the basis of the foregoing, we can make a well-founded conclusion that pregnancy and the postpartum period are accompanied by significant stress on the functional state of various physiological systems, which, in turn, can cause a decrease in the quality of life of pregnant women and puerperae [2].

**The purpose** of the study was to provide a comprehensive analysis of the structural components of the quality of life in women with early postpartum complications.

**Material and methods.** For the study, a selection was made of patients who gave birth on the basis of the Scientific Research Institute of Obstetrics and Gynecology in Baku. 150 puerperae were divided into two groups: the main group – puerperae with postpartum complications (n=100), the control group – puerperae with a physiological course of puerperium (n=50). The mean age of puerperae in groups was  $29.9 \pm 0.64$  and  $30.3 \pm 0.86$  years ( $p=0.679$ ).

The study was carried out in accordance with the principles of bioethics set forth in the Declaration of Helsinki “Ethical Principles for Medical Research Involving Humans” developed by the World Medical Association (UNESCO). All women received an explanation and signed an informed consent to participate. The protocol of this study was approved by the Ethics Committee of the Azerbaijan Medical University (No. 11, 12/29/2019).

The collection of anamnestic data was carried out by studying medical records, case histories and outpatient cards of patients in the departments of outpatient diagnostics, pathology of pregnancy and gynecology of the Research Institute of Obstetrics and Gynecology. The inclusion criteria for patients in this study were: complaints of pain in the lower abdomen, fever, purulent discharge, and subinvolution of the uterus. Mental illness and recurrence of severe somatic pathology were defined as exclusion criteria.

Based on subjective perception, in addition to the psychological and emotional state of the examined puerperae, using a specialized questionnaire SF-36, an integral characteristic of their quality of life was carried out. The questionnaire consists of 36 questions grouped into eight scales: physical functioning (Physical Functioning – PF), role-playing activity (Role-Physical Functioning – RP), bodily pain (BP), general health (General Health – GH), life activity (Vitality – VT), social functioning (Social Functioning – SF), emotional state (Role-Emotional – RE) and mental health (Mental Health – MH). The scales are grouped into two indicators: PH (“physical component of health”) and MH (“mental component of health”). The physical component of health consists of the following scales: physical functioning; role-based functioning due to physical condition; pain intensity; general health. The psychological component of health consists of the following scales: mental health; role-based functioning due to emotional state; social functioning; vital activity. The higher is the value of the index (from 0 to 100), the better is the score on the selected scale.

Statistical data processing was carried out using the Statistica 7.0 application package using the Excel 2013 standard statistical analysis package. Quantitative features were subjected to statistical processing by calculating the arithmetic mean (M) and its error (SE). The statistical significance of the obtained differences between the values is determined by calculating the Student's t-test. Fisher's exact test was used to select the most informative features. The significance level  $p < 0.05$  was used as the minimum allowable value.

Table 1

**Somatic and obstetric-gynecological status of puerperae in anamnesis % (M±m)**

Risk factors	The main group, the proportion (%) of patients n=100		Control group, proportion (%) of patients n=50		P
	abs.	%	abs.	%	
<i>Obstetric and gynecological status</i>					
Salpingoophoritis	30	30.0±4.58	4	8.0±3.84	0.002*
Threat of pregnancy termination	19	19.0±3.92	3	6.0±3.36	0.048*
Pathology of the cervix	16	16.0±3.67	4	8.0±3.84	0.210
Ovarian cyst	5	5.0±2.18	2	4.0±2.77	1.000
Endometriosis	7	7.0±2.55	2	4.0±2.77	0.718
Endocervicitis	9	9.0±2.86	2	4.0±2.77	0.338
Vulvovaginitis	5	5.0±2.18	3	6.0±3.36	0.925
Colpitis	21	21.0±4.07	3	6.0±3.36	0.018*
<i>Structure of extragenital pathology</i>					
Diseases of the upper respiratory tract	20	20.0±4.00	2	4.0±2.77	p=0.007
Diseases of the endocrine system	16	16.0±3.67	6	12.0±4.60	p=0.628
Diseases of the cardiovascular system	30	30.0±4.58	14	28.0±6.35	p=0.851
Diseases of the digestive system	6	6.0±2.37	5	10.0±4.24	p=0.507
Diseases of the kidneys and urinary tract	24	24.0±4.27	11	22.0±5.86	p=0.840
Chronic pyelonephritis	24	24.0±4.27	5	10.0±4.24	p=0.048*
Chronic cholecystitis	2	2.0±1.40	2	4.0±2.77	p=0.601
Obesity	9	9.0±2.86	3	6.0±3.36	p=0.751

Note: \* – Significant differences between groups ( $p < 0.05$ ) (according to Fisher's exact test)

**Results of the study and their discussion.** According to obtained data, women with a small number of births in the anamnesis often fall into the risk group for postpartum inflammatory complications ( $p=0.014$ ).

In the control group, marital status revealed a greater number of married women ( $p=0.007$ ). Conducted in order to determine the most informative and minimally invasive methods for diagnosing infectious and inflammatory complications of the postpartum period, the studies revealed a high risk of morbidity associated with the presence in the history of inflammatory diseases of the pelvic organs, in particular, chronic salpingo-oophoritis ( $p=0.002$ ) and colpitis ( $p=0.018$ ) (table 1).

The revealed results show that the presence of a threat of miscarriage during pregnancy is also a serious risk factor for the complicated course of puerperia ( $p=0.048$ ). When analyzing the anamnestic data in the main group, there is a high level of past extragenital diseases.

Chronization of the systemic pathological process is one of the important risk factors for the development of complications in the postpartum period. In the main group, the women examined were significantly more likely to suffer from inflammatory diseases of the respiratory and genitourinary systems. Among extragenital diseases in puerperal women with identified complications of the puerperal period, chronic pyelonephritis ( $p=0.048$ ) and diseases of the organs of ORL-organs (chronic tonsillitis, sinusitis) were the most common, the rates for which significantly exceed those in the control group ( $p=0.007$ ).

The quality of life of women with physiological course and complications of the postpartum period is presented in table 2.

Table 2

**Quality of life of women with physiological course and complications of the postpartum period**

Quality indices life	Group 1 (n=100)	Group 2 (n=50)	Validity of differences, $p$
Physical functioning (PF)	63.3±0.80 (40.0–80.0)	82.3±0.86 (70.0–95.0)	$p=0.0001$
Role activity (RP)	34.3±1.36 (0.0–75.0)	67.5±2.50 (50.0–100.0)	$p=0.0001$
Pain intensity (BP)	73.2±0.93 (55.0–100.0)	81.9±0.71 (77.5–87.5)	$p=0.0001$
General Health (GH)	69.2±0.71 (60.0–85.0)	78.2±1.14 (60.0–95.0)	$p=0.0001$
Vital activity (VT)	56.8±1.08 (40.0–85.0)	66.8±0.67 (60.0–75.0)	$p=0.0001$
Social functioning (SF)	72.4±0.93 (62.5–100.0)	82.3±1.56 (62.5–100.0)	$p=0.0001$
Emotional condition (RE)	64.7±3.03 (33.3–100.0)	71.3±2.86 (33.3–100.0)	$p=0.1615$
Mental health (MH)	69.6±0.64 (60.0–92.0)	77.8±1.03 (64.0–96.0)	$p=0.0001$

Note: differences in scores were evaluated by the Student's t-criterion, considering them reliable at  $p<0.05$ .

The quality of life of women in the control group in the early postpartum period is characterized by relatively higher values on almost all scales of the questionnaire, including, in particular, “Role functioning due to emotional state” (RE), “General health” (GH) and “Pain Intensity” (BP). When studying the degree of negative psycho-emotional manifestations of the pain syndrome, in contrast to the results obtained in the control group, the worst indicators for assessing the attitude towards pain (BP) were found in patients of the main group, due to the presence of a high frequency of radiating abdominal pain –  $73.2 \pm 0.93$  and  $81.9 \pm 0.71$  points, respectively;  $p = 0.0001$ ).

The average values of the scales characterizing “Mental health” and “Vital activity” indicate that for the majority of women of the main group in the early puerperal period, a deterioration in the physical and psychological component is characteristic, which, in our opinion, is due to pathological inflammatory changes developing in pelvic organs of the organism. The low level of physical functioning and the presence of a pronounced pain symptom, identified during the examination of puerperae of the main group, negatively affect their overall level of functioning and general health. Thus, the average values obtained in this group on the scales “Intensity of pain” (BP) and “Role functioning due to physical condition” (RPP) indicate that the majority of women here feel limiting painful manifestations and experience limitations in their physical functioning.

The study of the content of other scales and the registered low scores on the components of the scales “Role functioning due to the emotional state” and “Social functioning” indicate that puerperae with postpartum inflammatory complications experience some difficulties in performing their daily role tasks

and in interacting with surrounding. According to the obtained statistically verified data, a significant decrease in the values on the scale “Physical functioning” in the main group, compared with the control group ( $63.3 \pm 0.80$  and  $82.3 \pm 0.86$ , respectively;  $p=0.0001$ ), suggests that with the development of postpartum inflammatory complications, women feel more limited in physical activity and certain physical activities. A statistically significant decrease in indicators on the Mental Health (MH) scale in the main group –  $69.6 \pm 0.64$ , versus  $77.8 \pm 1.03$  in the control group of women with a physiological course of the postpartum period, shows that with the development of early puerperal complications worsens the mental state and well-being of the examined women ( $p=0.0001$ ). Significantly low scores on the Vital Activity (VT) scale, one of the important components of the questionnaire, in women of the main group indicate a relatively frequent negative assessment of their mental state.

A comparative analysis of the data obtained did not reveal significant differences between the indicators of both groups of women on the scale “Emotional State” ( $p=0.1615$ ). Evaluation of role emotional functioning and the state of one's own health indicates the preservation of rather low indicators of the quality of life in puerperal women with puerperal complications.

The obtained results fix a pronounced negative trend in terms of both the physical and mental components of health. Based on the information about the normative values of the SF-36 questionnaire [1], it can be noted that in the early postpartum period, against the background of the development of inflammatory complications in the pelvic organs, the average indicators of mental and physical health components tend to the lower limit of the normative range.

According to the results of the studies, the risk group for the development of postpartum infectious and inflammatory complications and a decrease in the quality of life included puerperae with previously diagnosed chronic tonsillitis, sinusitis and chronic pyelonephritis, which correlate with the data of Grundström, H. et al. (2022), who pointed to a significant decrease in the quality of life in five parameters (physical role functioning, emotional role functioning and social functioning) in women with chronic diseases of the genitourinary system in the puerperal period [4]. Our clinical and psychological studies and previously published scientific papers indicate the development of postpartum depression, an increase in the level of anxiety and depressive disorders and a decrease in the overall quality of life [14] in patients with complicated course of the puerperal period.

When studying the relationship between objective indicators of the health of the puerperas examined by us and the peculiarities of their perception of their condition in terms of physical, psychological and social well-being and comparing the identified indicators of quality of life with similar data from other authors obtained in a sample of women of reproductive age, we revealed a decrease in the level of quality of life indicators in women with complications of childbirth and early puerperia, and it turned out that both the physical and mental components of health suffer simultaneously [15]. At the same time, in practically healthy puerperae, the physical component of health suffers, first of all. It should be noted that against the background of a reduced indicator of physical functioning in this group of women, the assessment of their own health is somewhat different from the normative values of this indicator, which may indicate that puerperae with the absence of postpartum complications and a relatively positive somatic state, the puerperae of the control group are subjectively considered unfavorable own physical functioning compared to the period before pregnancy. In the presence of postpartum inflammatory complications, in the context of a generalized indicator of the quality of life, the mental component of health becomes more vulnerable [3].

The number of births, as a risk factor, having a certain negative impact on the course of early puerperium, can also affect the quality of life of puerperae during this period. Thus, primiparous women and women with metabolic disorders are more likely to experience physical and mental health problems in the postpartum period [9, 10], and the best indicators in this regard in the near and long term, puerperia was more often detected in multiparous women and in puerperae who did not have serious problems associated with the presence of somatic pathology in the prenatal and postnatal periods [11], that is, women with a history of impaired somatic status are characterized by a lower postpartum level of quality of life in terms of overall perception of health and vitality. The predictors of a decrease in the indicators of the physical component of the quality of life in women in the postpartum period, along with the presence of a history of somatic pathology, were a low level of education and lack of employment, which predetermined the importance of postpartum management, in particular housewives and poorly educated puerperae [5, 14]. The relationship we have identified between postpartum pathological processes and a lower quality of life indicator is confirmed by the results of the analysis of data from some foreign authors [13], according to which puerperal inflammatory complications affect the quality of life of mothers in all parameters of the SF-36 questionnaire and especially pronounced on the scales characterizing the psycho-emotional state.

Thus, improving the effectiveness and timely implementation of targeted rehabilitation measures is ensured by identifying the main risk factors in the early postpartum period that negatively affect the quality of life of puerperae. Assessment of the quality of life in the early puerperal period allows us to trace the state of health of puerperae in aspects of physical, psycho-emotional and social well-being. And as many authors note, the study of women's quality of life and the analysis of its dynamics of its changes in the postpartum period will simultaneously build an optimal model for the formation of protective factors for preserving the health of the mother and the emotional and personal development of the child in the first months of life [3].

### Conclusions

1. Indicators for some components of the quality of life questionnaire revealed a significant decrease in the values on the scale “Physical functioning” in the main group, compared with the control group ( $63.3 \pm 0.80$  and  $82.3 \pm 0.86$ , respectively;  $p=0.0001$ ).
2. The studying of psycho-emotional state of puerperae showed evidenced by a statistically significant decrease in indicators on the Mental Health (MH) scale in the main group –  $69.6 \pm 0.64$ , versus  $77.8 \pm 1.03$  in the control group ( $p=0.0001$ ).
3. The features of the quality of life of women with early postpartum complications are characterized by an increase in restrictions in the performance of physical activity and a marked deterioration in the psycho-emotional state of puerperae. The assessment of the quality of life should help to strengthen the theoretical basis for increasing the effectiveness of comprehensive therapeutic and psychological care for women in a complicated postpartum period.

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