

Clinical and psychological ground of principles of prognostication of premature delivery risk

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The objective: to assess the diagnostic significance of anamnestic and clinical-psychological factors and develop the prediction criteria for the threat of premature birth (PB).

Materials and methods. An analysis of the data of pregnant women who were tested in the II and early III trimesters (screening is the I stage of the study) was carried out. The pregnant women were conditionally divided into two groups. The main group included 30 women whose further course of pregnancy was complicated by the threat of PB. The comparison group included 222 women without clinical manifestations of threat of PB during the current pregnancy.

During the II stage of the study, the systematization of existing anamnestic and clinical-psychological factors among the examined women was performed. At the III stage, a comparative analysis of the frequency of the symptoms identified at the I stage was carried out in pregnant women in groups with the calculation of diagnostic coefficients (DC) of measures of informativeness (MI) according to formulas.

Diagnostic (prognostic) tables were created for each factor, DC and MI were calculated based on the ratio of frequencies. According to the methodology for calculating the accuracy of the diagnostic decision to achieve a probability level of 95 % ($p=0.05$), the limit \sum_{DC} is a constant = ± 13 , to achieve a probability of 99 % = ± 20 , to achieve a probability of 99.9% = ± 30 . If there is a factor in the column of the scale that is not included in the spectrum of exclusions, put a check mark in the "yes" column of the corresponding row. In the absence of such a check mark is placed in the "no" column of the corresponding row. Regarding the filling of each row, the sum of DC is calculated by adding up the indicated DCs, in the case of reaching the value of \sum_{DC} , a preliminary diagnostic conclusion is made about the probability for threat of PB (at $\sum_{DC} = -13$), which has a confidence level of 95 % ($p=0.05$). If the value of $\sum_{DK} = -20$ is reached, a final diagnostic conclusion is made about the probability of 99 % for threat of PB ($p=0.01$). If the limit of the range is $-13 < \sum_{DC} < +13$, the conclusion is significant because in such case its "p" is > 0.05 .

Results. Based on the values of DC and MI of Kullbak (valid signs), a clinical scale to predict threat of PB with a confidence level of 95 % ($p=0.05$) or 99 % ($p=0.01$) was developed. Among the informative signs (factors) for predicting of threat of PB the following factors were established: spontaneous miscarriage in the anamnesis, high personal and situational anxiety (45 points and above), IV and more pregnancies and artificial abortion in the anamnesis, as well as the level of neuroticism (16 points and above).

Conclusions. It has been established that anamnestic and clinical-psychological factors, namely, miscarriage in the anamnesis, artificial abortion in the anamnesis, IV and more pregnancies, high levels of personal and situational anxiety and neuroticism, are important and effective criteria for predicting the threat of premature birth.

Keywords: pregnancy, anamnesis, psychoemotional state, threat of premature birth, prediction criteria.

Клініко-психологічне обґрунтування принципів прогнозування загрози передчасних пологів В.Г. Сюсюка, В.О. Потапов, А.О. Шевченко, О.Д. Кирилюк, Н.О. Губа, Н.О. Мосол

Мета дослідження: оцінювання діагностичної значущості анамнестичних і клініко-психологічних факторів та розроблення критеріїв прогнозування загрози передчасних пологів (ЗПП).

Матеріали та методи. Було проведено аналіз даних вагітних, які пройшли тестування у II та на початку III триместра (скринінг – I етап дослідження). Вагітні умовно були розподілені на дві групи. В основну групу увійшли 30 жінок, у яких подальший перебіг гестації ускладнився клінікою ЗПП. До групи порівняння включені 222 жінки без клінічних проявів ЗПП у період поточної вагітності.

На II етапі дослідження була проведена систематизація існуючих анамнестичних і клініко-психологічних чинників серед контингенту обстежених жінок. На III етапі виконано компаративний аналіз частоти виникнення ознак, виділених на I етапі, у вагітних у групах з розрахунком діагностичних коефіцієнтів (ДК) мір інформативності (МІ) за формулами. Проведено формування діагностичних (прогностичних) таблиць для кожного фактора, на підставі співвідношення частот були розраховані ДК та МІ. Згідно з методологією розрахунку достовірності діагностичного рішення для досягнення рівня ймовірності 95 % ($p=0.05$), порогова \sum_{DK} є константою = ± 13 , для досягнення ймовірності 99% = ± 20 , для досягнення ймовірності 99,9% = ± 30 . За наявності фактора у бланку шкали, яка не входить до спектра виключених, ставлять відмітку у стовпці «так» відповідного ряду. За відсутності такого відмітку ставлять у графі «ні» відповідного ряду.

Щодо заповнення кожного ряду, проводять підрахунок суми ДК шляхом складання зазначених ДК, у разі досягнення значення $\sum_{\text{ДК}}$ роблять попередній діагностичний висновок про ймовірність ЗПП (при $\sum_{\text{ДК}} = -13$), що має рівень достовірності 95% ($p=0,05$). У разі досягнення значення $\sum_{\text{ДК}} = -20$, роблять остаточний діагностичний висновок про ймовірність ЗПП 99% ($p=0,01$). Якщо межа діапазону $-13 < \sum_{\text{ДК}} < +13$ – висновок не можна вважати достовірним, тому що при цьому його $p > 0,05$.

Результати. На підставі значень ДК та МІ Кульбака (валідних ознак) розроблена клінічна шкала, що дозволяє прогнозувати ЗПП з рівнем достовірності 95% ($p=0,05$) або 99% ($p=0,01$). Серед інформативних ознак (факторів) прогнозування ЗПП встановлені: мимовільний аборт в анамнезі, висока особистісна та ситуативна тривожність (45 балів і вище), IV і більше вагітностей та артифіціальний аборт в анамнезі, а також рівень нейротизму (16 балів і вище).

Висновки. Установлено, що анамнестичні та клініко-психологічні фактори, а саме – мимовільний аборт в анамнезі, артифіціальний аборт в анамнезі, IV та більше вагітностей, високи рівні особистісної та ситуативної тривожності і нейротизму, є важливими та ефективними критеріями для прогнозування загрози передчасних пологів.

Ключові слова: вагітність, анамнез, психоемоційний стан, загроза передчасних пологів, критерії прогнозування.

Preterm birth (PB) constitutes a significant international public health issue, with implications for child and family well-being. The rate of preterm birth is increasing every year [9, 22]. PB is one of the most important aspects of the problem of maternal and child health care, which is the most frequent cause of perinatal morbidity and mortality [3, 12, 13, 16, 20]. The course of an early neonatal period in premature newborns is characterized by a significant percentage of pathological conditions, primarily associated with the immaturity of organs and systems, unfavorable course of pregnancy and complications during premature birth [6]. Premature newborns belong to the group of high risk for the development of somatic, neurological and mental disorders [25].

Recent studies established that mothers of prematurely born children experience significant stress, which correlates with the age of the mother and length of treatment of a newborn in the intensive care unit, severity of child's condition, etc. Violation of parental role is the most significant stress factor and requires counseling of mothers, psychological and emotional support, their involvement in daily care of their baby, physical contact and closeness between mother and child during treatment in an intensive care unit [15]. Appearance of a prematurely born child becomes a catastrophic event and an impetus for parents, creating a situation of stress and helplessness. Parents experience emotional, interpersonal, informational, social stress, which leads to disruption of family functioning in many cases [5].

PB were steadily occupying one of the leading places in the structure of complicated pregnancy during the last two decades [4]. However, the urgency of the problem is determined not only by medical consequences, but also by social significance: population growth decreases, infant mortality increases, women's fertility function deteriorates [12, 13]. The frequency of occurrence of a threat of premature birth (TPB) in a pregnant woman depends on a complex of factors. Most significant are: complicated obstetric and gynecological history, gynecological and extragenital pathology are among them [4, 16]. Main factors in the development of PB include a high percentage of extragenital and gynecological pathology in the anamnesis, as well as early and late reproductive age of pregnant women, low financial security and late enrollment in women's counseling [6].

Premature delivery can occur as a result of physical, as well as psychological and social problems. Absolutely all these factors are related to each other and can mutually influence each other, reinforcing each other [25]. Thus, the threat of termination of pregnancy, due to unclear reasons, is seen in the action of stress factors of various origins. There are certain psychological features that become a prerequisite for termination of pregnancy. A high level of personal anxiety and anxiety-depressive neurotic disorders were noted in women with TPB. This contingent of women is more sensitive to stress and have an initial increased stress level, which leads to chronic psycho-emotional stress and exhaustion of compensatory mechanisms [24].

High levels of psychosocial stress and negative affect before and during pregnancy are contributing factors to shortened gestation and preterm birth [9]. Disturbances in the psycho-emotional sphere are observed in most women with TPB. They are manifested in a change in the relations between stress and relaxation indicators, energy accumulation and its expenditure, a decrease in well-being and activity, an increase in the influence of demobilization factors and level of anxiety, which is arising as a subjective reflection of a disturbed psychological and vegetative balance, serves as the most objective manifestation of psycho-emotional tension [19].

Psychoemotional disorders in women during pregnancy have an impact on its course and increase frequency of obstetric and perinatal pathology, namely miscarriage, hypertensive disorders, fetal growth retardation, etc. [21]. It has been proven that stress increases the risk of PB [7]. In addition, the impact of maternal stress on neurodevelopment, cognitive development, negative emotionality, difficult temperament and mental disorders is shown in numerous epidemiological studies. Prenatal exposure to maternal stress increases the risk of behavioral and mental health problems later in life [23].

Whereas stress exposure later in pregnancy, when the mother has already invested considerable resources in the fetuses, results in programmed offspring of low birthweight: a risk factor for various adulthood diseases. Neuroendocrine and behavioural responses to stress in the offspring are particularly sensitive to foetal programming by prenatal stress, indicated by enhanced hypothalamo-pituitary-adrenal (HPA) axis responses and increased anxiety behaviour, which result from permanent changes in the offspring's brain [2]. Dysregula-

tion of the maternal and offspring HPA axis has been proposed as a mechanism linking in utero stress with offspring behavioural outcomes [11]. Early life stress, including stress or in the prenatal and early postnatal period, is a key factor that can have long-term effects on offspring health [18].

A wide range of somatogenic and psychogenic factors influence the psychoemotional state of women during pregnancy. Assessment of a psycho-emotional state of women in the process of diagnosis and treatment in medical practice of obstetrics and gynecology is an important component of providing comprehensive care, due to the influence of psychological factors on the development, course, response and treatment of diseases and pathological conditions [14]. It is the assessment of perceived stress and the level of stress that are considered as significant prognostic factors of preterm birth [22].

Therefore pre-clinical diagnosis of TPB is of fundamental importance. It will allow appropriate timely preventive measures to be carried out and contribute to the reduction of TPB rate and, accordingly, frequency of perinatal pathology [8]. The use of test methods, as one of the components of a comprehensive examination of pregnant women, will allow to develop a forecasting algorithm, carry out early diagnosis of deviations in the psychological state of pregnant women and their timely correction in order to reduce the risk of miscarriage and perinatal pathology [19].

The objective: to assess the diagnostic value of anamnestic and clinical-psychological factors and to develop criteria for predicting the threat of premature birth.

MATERIALS AND METHODS

An analysis in 277 pregnant women who were tested in the IInd and early IIIrd trimesters (screening – the 1st stage of the study) was conducted in order to assess the diagnostic value of anamnestic and clinical-psychological factors and to develop criteria for predicting the threat of premature birth (TPB). Pregnant women were conditionally divided into two groups. In 30 women, the further course of pregnancy was complicated by the TPB – the main group. The comparison group included 222 women without clinical manifestations of TPB during this pregnancy. The average age of pregnant women in the main group was 27.6 ± 1.7 years and 27.6 ± 0.6 years in the comparison group ($p > 0.05$).

The psycho-emotional state of pregnant women was studied using a complex of psychodiagnostic methods: a semi-structured interview, Eysenck's EPQ questionnaire, as well as the scale of situational (SA) and personal anxiety (PA) Ch.D. Spielberger, which was adapted by Y.L. Khanin [1, 17].

In order to increase the effectiveness of the sample and to exclude from the study the contingent of women who are dominated by pathological psychological reactions in connection with somatic pathology (SP), and not as a result of responding to the peculiarities of the gestational process, at the 1st stage screening of preg-

nant women was carried out using a multi-vector psychodiagnostic protocol of disqualification of abnormal levels of anxiety.

Contrasomatogenic vector, provided for the exclusion of somatopsychic states which present anxiety, as one of the manifestations of a pathological psychological reaction to SP in the structure of the internal picture of the disease. Personal questionnaire of the Bekhterevsky Institute (PQBI) was used as a diagnostic tool to establish the type of attitude towards the disease and other related personal relationships in pregnant women with chronic somatic diseases. The criterion of mental maladjustment was the presence of a pregnant woman's attitude to the disease, the type of which was different from the harmonious one. Its use is of fundamental importance for diagnosing the role of the psychosomatic component in pregnant women with SP.

This is due to the fact that the prevalence of SP in the pregnant population is quite high and, despite the young age, is at least 50% [10]. Thus, it was established that 25 (16.1%) pregnant women with SP had a disharmonious type of attitude towards a somatic illness, and they were excluded from further research.

Testing was carried out both on paper media and with the use of the «ReoCom» Stress diagnostic complex in the «Classic test» mode, which was developed in the laboratory of diagnostic systems of the National Aerospace University «KHAI-MEDYKA» (Kharkov).

At the II stage of the study, the existing anamnestic and clinical-psychological factors among the contingent of examined women were systematized. At the III stage - a comparative analysis of frequency of occurrence of symptoms identified at the first stage in pregnant women in groups was carried out with the calculation of diagnostic coefficients (DC) of measures of informativeness (MI) according to the formulas (Gubler E.V., Genkin A.A., 1973; Gubler E.V., 1976):

$$DC = 101g A_1/A_2; \quad (1)$$

$$MI = 101g A_1/A_2 \cdot 0.5 [A_1 - A_2]; \quad (2)$$

where: *DC* – diagnostic coefficient коефіцієнт; *MI* – measure of Culbak's informativeness; A_1 – frequency of the sign in the main group; A_2 – frequency of the sign in the in the comparison group.

All significant signs were further summarized in the appropriate differential diagnostic table and placed in it in order of decreasing informativeness.

Each pregnant woman was interviewed about the expediency of additional research methods and consent to their implementation was obtained. The research meets the modern requirements of moral and ethical norms regarding the rules of ICH / GCP, the Declaration of Helsinki (1964), the Conference of the Council of Europe on Human Rights and Biomedicine, as well as the provisions of legislative acts of Ukraine.

Variational and statistical processing of the results was carried out using licensed standard packages of multivariate statistical analysis application programs «STATISTICA 13».

Table 1

Diagnostic qualities of the level of anxiety, neuroticism and extraversion-introversion

Sign (presence)	Quantity in groups					p (χ^2)	Frequency ratio (G2/G1)	DC	MI
	Main		Comparison						
	Abs.	%	Abs.	%					
Situational anxiety									
30 degrees and lower	yes	7	23,3	56	25,2	0,822	1,08	0,34	0,00
	no	23	76,7	166	74,8	0,822	0,98	-0,11	0,00
31-44 degrees	yes	15	50	145	65,3	0,101	1,31	1,16	0,09
	no	15	50	77	34,7	0,101	0,69	-1,59	0,12
45 degrees and above	yes	8	26,7	21	9,5	<0,01	0,35	-4,50	0,39
	no	22	73,3	201	90,5	<0,01	1,23	0,92	0,08
Personal anxiety									
30 degrees and lower	yes	0	0	3	1,4	0,521	-	-	-
	no	30	100	219	98,6	0,521	0,99	-0,06	0,00
31-44 degrees	yes	12	40	150	67,6	<0,003	1,69	2,28	0,31
	no	18	60	72	32,4	<0,003	0,54	-2,67	0,37
45 degrees and above	yes	18	60	69	31,1	<0,002	0,52	-2,86	0,41
	no	12	40	153	68,9	<0,002	1,72	2,36	0,34
Neuroticism									
before 12 degrees	yes	13	43,3	132	59,5	0,093	1,37	1,37	0,11
	no	17	56,7	90	40,5	0,093	0,72	-1,45	0,12
13-15 degrees	yes	3	10	48	21,6	0,137	2,16	3,35	0,19
	no	27	90	174	78,4	0,137	0,87	-0,60	0,03
16-19 degrees	yes	9	30	30	13,5	<0,02	0,45	-3,46	0,29
	no	21	70	192	86,5	<0,02	1,24	0,92	0,08
20 degrees and above	yes	5	16,7	12	5,4	<0,02	0,32	-4,89	0,28
	no	25	83,3	210	94,6	<0,02	1,14	0,55	0,03
Extraversion-introversion									
1-13 degrees	yes	14	46,7	108	48,6	0,838	1,04	0,18	0,00
	no	16	53,3	114	51,4	0,838	0,96	-0,16	0,00
14-24 degrees	yes	16	53,3	114	51,4	0,838	0,96	-0,16	0,00
	no	14	46,7	108	48,6	0,838	1,04	0,18	0,00

Table 2

Diagnostic qualities of social and biological factors, data of somatic and obstetric and gynecological anamnesis

Sign (presence)	Frequency in groups					p (χ^2)	Frequency ratio (G2/G1)	DC	MI
	Main		Comparison						
	Abs.	%	Abs.	%					
Age									
before 18 years	yes	0	0	3	1,4	0,521	-	-	-
	no	30	100	219	98,6	0,521	0,99	-0,06	0,00
19-34 years	yes	26	86,7	204	91,9	0,341	1,06	0,25	0,01
	no	4	13,3	18	8,1	0,341	0,61	-2,16	0,06
over 35 years	yes	4	13,3	15	6,8	0,200	0,51	-2,95	0,10
	no	26	86,7	207	93,2	0,200	1,08	0,32	0,01
Social worker									
Servants	yes	25	83,3	182	82	0,856	0,98	-0,07	0,00
	no	5	16,7	40	18	0,856	1,08	0,34	0,00
Management post	yes	6	30	24	10,8	0,145	0,54	-2,67	0,12
	no	24	80	198	89,2	0,145	1,11	0,47	0,02

Table 3

Diagnostic qualities of somatic data and obstetric and gynecological anamnesis

Sign (presence)		Frequency in groups				p (χ^2)	Frequency ratio (G2/G1)	DC	MI
		Main		Comparison					
		Abs.	%	Abs.	%				
Burdened somatic anamnesis	так	17	56,7	138	62,2	0,561	1,10	0,40	0,01
	ні	13	43,3	84	37,8	0,561	0,87	-0,59	0,02
Burdened gynecological anamnesis	так	24	80	163	73,4	0,470	0,92	-0,37	0,01
	ні	6	20	59	26,6	0,470	1,33	1,23	0,04

Table 4

Diagnostic properties of the data of somatic and obstetric and gynecological anamnesis

Sign (presence)		Frequency in groups				p (χ^2)	Frequency ratio (G2/G1)	DC	MI
		Main		Comparison					
		Abs	%	Abs.	%				
Uterine leiomyoma	yes	2	6,7	3	1,4	<0,05	0,20	-6,93	0,18
	no	28	93,3	219	98,6	<0,05	1,06	0,24	0,01
Infertility	yes	2	6,7	5	2,3	0,17	0,34	-4,71	0,10
	no	28	93,3	217	97,7	0,17	1,05	0,20	0,00
Artificial abortion	yes	11	36,7	39	17,6	<0,01	0,48	-3,20	0,31
	no	19	63,3	183	82,4	<0,01	1,30	1,14	0,11
Spontaneous abortion in anamnesis	yes	11	36,7	16	7,2	<0,001	0,20	-7,07	1,04
	no	19	63,3	206	92,8	<0,001	1,47	1,66	0,24
Pregnancy (I)	yes	12	40	136	61,3	<0,03	1,53	1,85	0,20
	no	18	60	86	38,7	<0,03	0,65	-1,90	0,20
Pregnancy (II-III)	yes	12	40	75	33,8	0,502	0,84	-0,73	0,02
	no	18	60	147	66,2	0,502	1,10	0,43	0,01
Pregnancy (IV and more)	yes	6	20	11	5,0	<0,002	0,25	-6,06	0,46
	no	24	80	211	95,0	<0,002	1,19	0,75	0,06

Table 5

Prognostic factors of the threat of premature birth with a negative DC (in order of decreasing informativeness)

N ₂	Sign (presence)	DC	MI	
1	Spontaneous abortion in anamnesis	yes	-7,07	1,04
2	Leiomyoma of the uterine body	yes	-6,93	0,18
3	Pregnancy (IV and more)	yes	-6,06	0,46
4	Neuroticism (20 points and above)	yes	-4,89	0,28
5	Situational anxiety (45 points and above)	yes	-4,50	0,39
6	Neuroticism (16-19 points)	yes	-3,46	0,29
7	Artificial abortion	yes	-3,20	0,31
8	Personal anxiety (45 points and above)	yes	-2,86	0,41
9	Personal anxiety (31-44 points)	no	-2,67	0,37
10	Pregnancy (I)	no	-1,90	0,20

RESEARCH RESULTS AND THEIR DISCUSSION

The main risk factors of TPB were identified and their diagnostic properties were established, the values of which were summarized in the corresponding differential diagnostic tables (tables 1-4).

The formation of diagnostic (prognostic) tables was carried out in future. At the same time, DC and MI were calculated for each factor based on the frequencies ratio. The analysis of the reliability of the differences (threshold value of the p-criterion ≤ 0.05) and measures of informativeness of the features made it possible to select from the general array exactly those features that were valid (Table 5 and Table 6).

According to the methodology for calculating reliability of diagnostic decision to achieve a probability level of 95% ($p=0.05$), the threshold ΣDC is a constant $= \pm 13$, to achieve a probability of 99% $= \pm 20$, to achieve a probability of 99.9% $= \pm 30$. So, when $\Sigma DK < -13$; -20 and -30 a set of factors with a probability of 95%; 99% and 99.9%, respectively, indicates the probability of TPB. When $\Sigma DK > +13$; $+20$ and $+30$ – a set of factors with a probability of 95%; 99% and 99.9%, respectively, indicates no risk of TPB. On the basis of the obtained data a differential diagnostic table in which the markers of differentiation were located in order of decreasing ΣMI was constructed (Table 7).

This order of markers in the table is dictated by the requirements of the sequential Wald procedure in

Table 6

Prognostic factors of the threat of premature birth with a positive DK (in order of decreasing informativeness)

№	Sign (presence)		DC	MI
1	Personal anxiety (45 degrees and above)	no	2,36	0,34
2	Personal anxiety (31–44 degrees)	yes	2,28	0,31
3	Pregnancy (I)	yes	1,85	0,20
4	Spontaneous abortion in the anamnesis	no	1,66	0,24
5	Artificial abortion	no	1,14	0,11
6	Situational anxiety (45 degrees and above)	no	0,92	0,08
7	Neuroticism (16–19 points)	no	0,92	0,08
8	Pregnancy (IV and more)	no	0,75	0,06
9	Neuroticism (20 degrees and above)	no	0,55	0,03
10	Leiomyoma of the uterine body	no	0,24	0,17

Table 7

Diagnostic table of factors predicting the threat of premature birth

№	Σ_{MI}	Sign (marker)	Sign range	DC
1	1,28	Spontaneous abortion in the anamnesis	yes	-7,07
			no	1,66
2	0,75	Personal anxiety (45 points and above)	yes	-2,86
			no	2,36
3	0,68	Personal anxiety (31–44 points)	yes	2,28
			no	-2,67
4	0,52	Pregnancy (IV and more)	yes	-6,06
			no	0,75
5	0,47	Situational anxiety (45 points and above)	yes	-4,50
			no	0,92
6	0,42	Artificial abortion	yes	-3,20
			no	1,14
7	0,40	Pregnancy (I)	yes	1,85
			no	-1,90
8	0,37	Neuroticism (16–19 points)	yes	-3,46
			no	0,92
9	0,31	Neuroticism (20 points and above)	yes	-4,89
			no	0,55
10	0,19	Leiomyoma of the uterine body	yes	-6,93
			no	0,24

Note: Σ_{MI} – the total informativeness of both ranges of signs (consists of the informativeness of the presence and absence of this sign).

Table 8

Form for predicting the threat of premature birth

№	Sign (marker)	Yes	No	Σ_{DK}
1	Spontaneous abortion in anamnesis	-7,07	1,66	
2	Personal anxiety (45 points and above)	-2,86	2,36	
3	Personal anxiety (31–44 points)	2,28	-2,67	
4	Pregnancy (IV and more)	-6,06	0,75	
5	Situational anxiety (45 points and above)	-4,50	0,92	
6	Artificial abortion	-3,20	1,14	
7	Pregnancy (I)	1,85	-1,90	
8	Neuroticism (16–19 points)	-3,46	0,92	
9	Neuroticism (20 points and above)	-4,89	0,55	
10	Leiomyoma of the uterine body	-6,93	0,24	

which they are used. Analysis of diagnostically valuable signs (factors) in the order «from the most informative to the least informative» provides the shortest path to a diagnostic conclusion of the required level of reliability.

The obtained signs (factors) were used in the formation of the TPL prediction form (Table 8).

If there is a factor in a form of the scale that is not included in the spectrum of excluded, a mark is placed in the «yes» column of the corresponding row. In the absence of such a mark, «no» is indicated in the column of the corresponding row. Regarding the filling of each row, the sum of DC is calculated by adding up the specified DCs, when the value of ΣDC is reached, a preliminary diagnostic conclusion is made about the probability of the threat of premature birth (at $\Sigma DC = -13$), which has a reliability level of 95% ($p=0.05$). When the value of $\Sigma DK = -20$ is reached, a final diagnostic con-

clusion is made about the probability of a threat of premature birth of 99% ($p=0.01$). If the limit of the range is $-13 < \Sigma DK < +13$ – the conclusion cannot be considered reliable, because its $p > 0.05$.

CONCLUSION

Based on the data of diagnostic coefficients and measures of Kullbak's informativeness (valid signs), the clinical scale, that allows predicting the threat of premature birth with a reliability level of 95% ($p=0.05$) or 99% ($p=0.01$), was developed.

Among the informative signs (factors) for predicting the threat of premature birth, the following are established: spontaneous abortion in the anamnesis, high level of personal and situational anxiety (45 points and above), IV and more pregnancies and artificial abortion in the anamnesis, as well as the level of neuroticism (16 points and above).

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