АКУШЕРСТВО

Peculiarities of clinical characteristics of pregnant with symptoms of Great obstetrical syndromes

N.Yu. Lemish

State higher educational institution «Uzhhorod National University»

The objective: to establish the risk factors for development of great obstetrical syndromes (GOS) on the basis of a prospective analysis of somatic, reproductive, obstetric anamnesis in pregnant women with clinical manifestations of GOS

Materials and methods. We conducted the analyses of somatic, reproductive and obstetrical history of 572 pregnant with clinical symptoms of GOS, who had the following complications: 21 – preeclampsia, 38 – preterm deliveries, 13 – placental abruption, 457 – gestational anemia, 27 – intrauterine growth retardation, 16 – fetal distress, that were diagnosed based on clinical, functional, laboratory, ultrasound, cardiotocographic and morphological investigations. All these complications are included in the group of GOS.

Statistical analyze was conducted by using standard programs of Microsoft Excel 5.0 and Statistica 6.0.

Results. The average age of the pregnant women was 26.5±2.3 years, most of them were in young reproductive age. The prevailing diseases in the structure of somatic pathology were thyroid gland pathology – 427 (74.6 %) persons, anemia 182 (31.8 %), arterial hypertension – 114 (19.9 %), kidney diseases – 241 (42.1 %) and diseases of gastro-intestinal tract –187 (32.7 %). Disorders of menstrual cycle were determined in 137 (23.9 %) women, chronic pelvic inflammatory diseases – 98 (17.1 %), background diseases of cervix (erosion, cervical dysplasia) had 142 (24.8 %) patients in anamnesis, colpitis – 296 (51.7 %), polycystic ovaries – 74 (12.9 %).

The following pregnancy complications were diagnosed as preeclampsia – in 21 (3.7 %) persons, threatened preterm interruption of pregnancy in different gestational terms – in every third pregnant women (192 individuals – 33.7 %), anemia – 457 (79.9 %), preterm delivery – 38 (6.6 %) women, placental abruption – 13 (2.3 %), fetal growth retardation – in 27 cases (4.7 %), fetal distress – 16 (2.8 %). The rate of cesarean section in this group was 28.8 %.

Conclusions. The identified peculiarities of somatic, reproductive history and obstetrical and perinatal pathology in pregnant with complications from GOS group allowed to define the following risk factors of their development: young reproductive age, significant frequency of socio-hygienic, medical and demographic and socio-psychological problems, complicated somatic, gynecological and reproductive history.

Keywords: somatic history, reproductive history, obstetrical history, great obstetrical syndromes, prognosis of development.

Особливості клінічної характеристики вагітних з проявами великих акушерських синдромів
Н.Ю. Леміш

Мета дослідження: на підставі проспективного аналізу соматичного, репродуктивного, акушерського анамнезу у вагітних із клінічними проявами великих акушерських синдромів встановлення факторів ризику їхнього розвитку.

Матеріали та методи. Проведено аналіз соматичного, репродуктивного, акушерського анамнезу у 572 вагітних із клінічними проявами великих акушерських синдромів (ВАС), у яких на підставі клініко-функціональних, лабораторних, ультразвукових, кардіотокографічних та патоморфологічних досліджень були встановлені такі ускладнення: 21 – прееклампсія, 38 – передчасні пологи, 13 – передчасне відшарування нормально розташованої плаценти, 457 – гестаційна анемія, 27 – синдром затримки росту плода, 16 – дистрес плода. Усі ці ускладнення вагітності та пологів входять до групи ВАС.

Статистичне оброблення результатів досліджень проводили з використанням стандартних програм Microsoft Excel 5.0 та Statistica 6.0.

Результати. Середній вік обстежених вагітних становив 26,5±2,3 року, більшість з них знаходились у молодому репродуктивному віці. У структурі соматичної патології переважали: захворювання щитоподібної залози – у 427 (74,6 %) жінок, анемія – у 182 (31,8 %), артеріальна гіпертензія – у 114 (19,9 %), захворювання нирок – у 241 (42,1 %) і травного тракту – у 187 (32,7 %) жінок. Порушення менструального циклу відзначали у 137 (23,9 %) пацієнток, хронічні запальні захворювання органів малого таза – у 98 (17,1 %), фонові захворювання шийки матки (ерозії, дисплазії) мали в анамнезі 142 (24,8 %) жінки, вагініти – 296 (51,7 %), полікістоз яєчників – 74 (12,9 %).

Діагностовано такі ускладнення перебігу вагітності: прееклампсію виявлено у 21 (3,7 %) пацієнтки, загрозу переривання у різні терміни даної вагітності – у кожної третьої вагітної (192 жінки – 33,7 %), анемію – у 457 (79,9 %) випадках, передчасні пологи – у 38 (6,6 %), передчасне відшарування нормально розташованої плаценти – у 13 (2,3 %), затримку розвитку плода – у 27 (4,7 %) випадках, дистрес плода – у 16 (2,8 %). Частота кесарева розтину у цій групі становила 28,8 %.

Висновки. Виявлені особливості соматичного, репродуктивного анамнезу та акушерської і перинатальної патології у вагітних, які мали ускладнення із групи ВАС, дозволили визначити такі фактори ризику їхнього розвитку: молодий репродуктивний вік, значна частота соціально-гігієнічних, медико-демографічних і соціально-психологічних проблем, обтяжений соматичний, гінекологічний та репродуктивний анамнез.

Ключові слова: *соматичний анамнез, репродуктивний анамнез, акушерський анамнез, великі акушерські синдроми, прогнозування розвитку*

Perinatology, as a science, is based on the hypothesis (and finding more and more confirm this) that human health, and, consequently, his fate, is laid in the prenatal period. It is these 280 days, as well as the next 2 years of life (collectively, the "first 1000 days of life") that determine what a person will be like, what he will eventually achieve, how and how long he will live [1–7]. Prevention and early diagnosis of gestational complications are of decisive importance not only for reducing the level of maternal and infant mortality, but also for reducing the incidence rate throughout a person's life. For example, today there is evidence that maternal hypertensive disorders during pregnancy are associated with attention deficit disorder, autism spectrum disorders, and impaired mental development in the child in the future [8–13].

R. Romero in his article "Perinatal medicine: The child is a father of a man" ("Perinatal medicine: A child gives birth to a man") emphasized that the perinatal period determines the state of a person's health throughout his future life and plays a key role in shaping his future. At the same time, he noted that today the situation in perinatal medicine is such that we diagnose clinical syndromes, but do not determine the diseases and pathogenetic mechanisms underlying them. For example, we diagnose preterm labor, but we cannot always differentiate whether it is caused by infection, vascular disease, myometrial overactivity, or something else. Therefore, one should not expect that there is any universal marker that has prognostic value in all cases [2, 5–7, 14].

The development of perinatology, as a science about the fetus and the baby, the determination of the main parameters of normal and disturbed homeostasis of the fetoplacental complex, followed by the development of methods for predicting and correcting the identified disorders is an important reserve for reducing obstetric and perinatal pathology, neonatal morbidity and mortality. This determines not only the medical, but also the social significance and relevance of main fetal life support system study – the fetoplacental complex, which integrates numerous relationships between the fetus and the mother.

Deterioration of the environmental situation, irrational nutrition, bad habits in combination with chronic diseases present in pregnant women and the use of medications without taking into account and taking into account their possible impact on placental homeostasis, leads to the development of placental dysfunction syndrome, which, in turn, is the cause of numerous violations in the functional to the mother-placenta-fetus system. Insufficiency of the placenta, due to violations of its adaptive and homeostatic reactions, and is either a complication associated with the pathological course of pregnancy against the background of extragenital pathology, or an independent nosological unit.

A growing body of evidence links placental vascular pathology to poor fetal growth and adverse pregnancy and delivery outcomes. And in turn, endothelial dysfunction and defective deep placentation are the basis of the development of "great obstetrical syndromes") or placenta-associated diseases of pregnancy [22, 23]. Therefore, one of the tasks of our work was the development of an effective method of forecasting the development of «great obstetric syndromes».

The objective: is to develop an effective forecasting system for Great obstetrical syndromes development based on a prospective analysis of somatic, reproductive, and obstetric anamnesis in pregnant women with clinical manifestations of great obstetrical syndromes").

MATERIALS AND METHODS

In order to develop an effective system for predicting GOS, we conducted a prospective analysis of 572 births in the Uzhhorod maternity hospital in 2021, in which the following complications were established on the basis of clinical and functional, laboratory, ultrasound, cardiotocographic and pathomorphological studies: 21 women – preeclampsia (PE), 38 – premature delivery (PD), 13 –
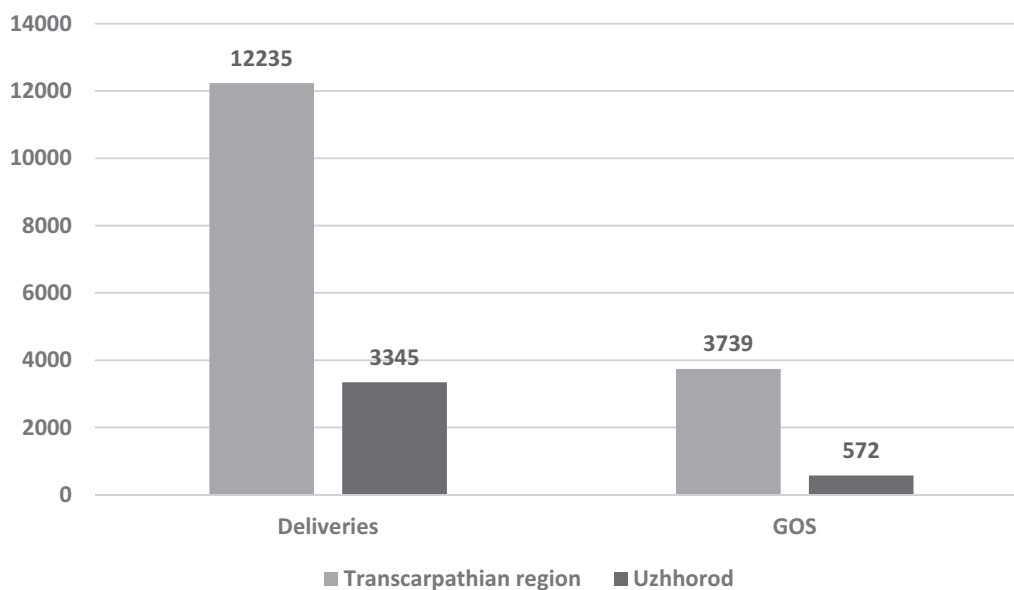

Fig. 1. GOS in pregnant of Transcarpathian region in 2021 (%)

Table 1

Characteristics of social risk factors on development of GOS among investigated patients

Index	Prognostic group, n=572	
	Absolute	Relative (%)
Social-hygenic (poor material and living conditions: mother or both parents-students; the work of the parents, especially the mother, is associated with occupational hazards, poor level of general and sanitation culture of the family)	297	51,9
Medical and demographic (incomplete family; mother aged below 18 or over 40 years; families with a child with congenital diseases or developmental defects; families in which there is a case of death of a child at an early age or stillbirth)	170	29,7
Social-psychological (alcohol or drug abuse, smoking, families with unwanted child, unfavourable psychological climat; families with a seriously ill member)	102	17,8
No risk factors present	3	0,6

placental abruption (PA), 457 – gestational anemia (GA), 27 – fetal growth retardation syndrome (IUGR), 16 – fetal distress (FD).

All these complications of pregnancy and childbirth are included in the group of GOS. The study of peculiarities of somatic, reproductive and perinatal pathology in pregnant, who had complications from Great obstetrical syndromes group allowed to determine risk factors and further in the study will indicate the clinical signs to evaluate individual risk for GOS development.

Statistical processing of research results was carried out using standard programs Microsoft Excel 5.0 and Statistica 6.0 [24-25].

RESULTS AND DISCUSSION

In Transcarpatian region, the number of births in 2021 was 12,235, complications in the form of GOS occurred in 3,739 (30.6 %) cases. Among them, the number of births in 2021 in Uzhhorod was 3345, and complications in the form of Great obstetrical syndromes were observed in 572 (16.1 %) cases (Figure 1).

According to the age structure, women were distributed as follows: the largest majority aged 20–25 years (44.5 %) and 26–30 years (34.6 %), women under 20 years of age 4,9 %, overe 35 years – 7.4 %. The average age of the examined pregnant women was 26.5±2.3 years. Thus, most of them were at young reproductive age.

Table 1 and Figure 2 show the incidence of socio-hygienic, medico-demographic and socio-psychological risk factors that occurred in the pregnant women examined by us, which indicate the impact of these factors on development of GOS during pregnancy.

The study of extragenital pathology showed rather high incidence and diversity of nosological forms of somatic pathology (fig. 3). Comorbid extragenital pathology amounted to 2.7 of nosological forms for each woman and was characterized by a combination of several diseases. The majority of somatic pathology was diseases of the thyroid gland – 427 (74.6 %), anemia 182 (31.8 %), arterial hypertension – 114 (19.9 %), kidney diseases – 241 (42.1 %) and gastrointestinal tract – 187 (32.7 %). Other nosological forms of extragenital pathology were rare.

Data concerning gynecological history are presented on fig.4. Disorders of menstrual cycle (MC) were present in 137 of patients (17.1 %), background diseases of uter-
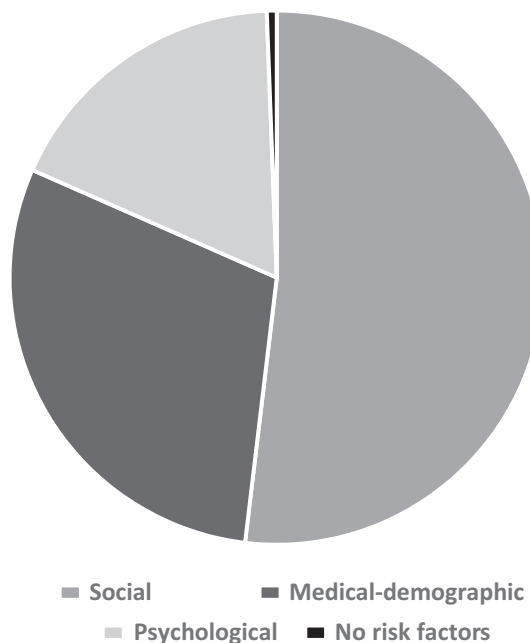
Fig. 2. Characteristic of social risk factors for GOS development (%)

ine cervix (cervical dysplasia) – 142 (24.8 %), colpitis – 296 (51.7 %), polycystic ovarian syndrome (PCOS) – 74 (12.9 %).

According to data from table 2, primigravida patients were 25.2 %, multigravida – 74.8 %, primipara – 70.3 %, multipara – 29.7 %, thus in the prognostic group the majority of women were multigravida primipara patients.

Table 2

Parity of pregnancy and labour (%)

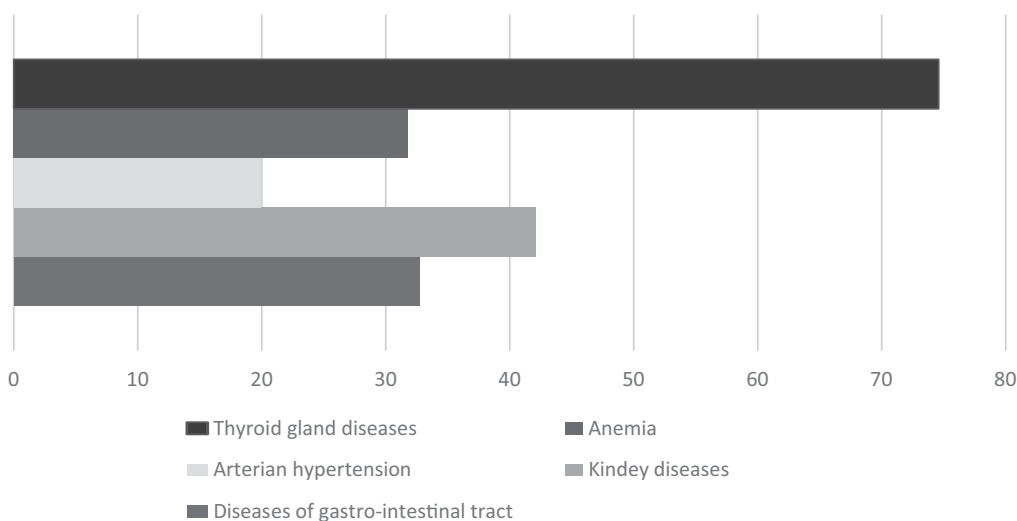| Index	Prognostic group n=572	
	Absolute	Relative (%)
Primigravida	144	25,2
Multigravida	428	74,8
Primipara	402	70,3
Multipara	170	29,7

Extragenital pathology

Legend:
- Thyroid gland diseases
- Anemia
- Arterian hypertension
- Kindey diseases
- Diseases of gastro-intestinal tract

Fig. 3. Structure of extragenital pathology (%)

Gynecological pathology

Legend:
- Disorders of menstrual cycle
- Chronic inflammatory diseases
- Cervical dysplasia
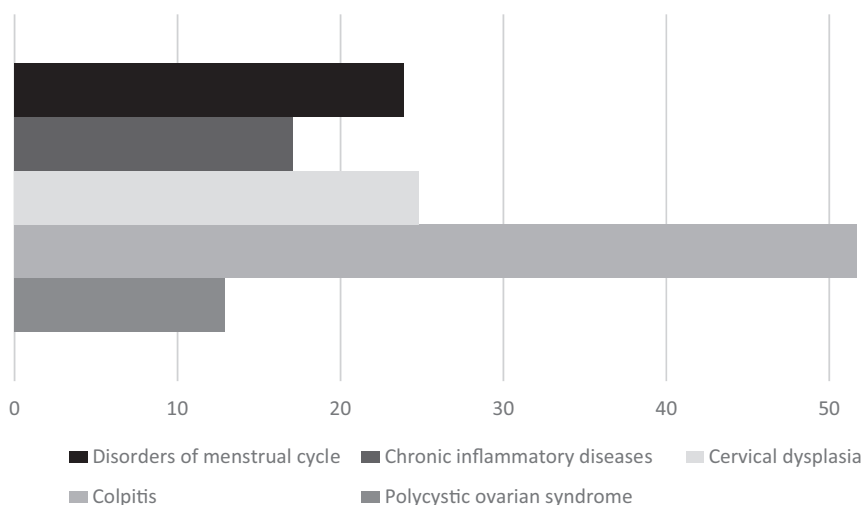- Colpitis
- Polycystic ovarian syndrome

**Fig. 4. Structure of gynecological pathology (%)**

Complications of pregnancy course in presented group were (fig. 4): 21 of women were diagnosed with preeclampsia (PE)(3.7 %), threatened pregnancy termination in different gestational terms (TPT) was diagnosed every third patient – 192 (33,7 %), gestational anemia (GA) complicated the course of gestation in 457 of prognostic group, that composed 79.9 % of cases, preterm delivery (PD) – 38 pregnant (6.6 %), placental abruption (PA) – 13 (2.3 %), intrauterine growth retardation (IUGR) – 27 patients (4.7 %), fetal distress (FD) – 16 (2.8 %), Cesarean section (CS) incidence was 28.8 %.

Vaginal delivery was in 407 of pregnant, that made up 71.2 %, the incidence of operative delivery was 28.8 %. Incidence of delivery complications was 274 (47.9 %), mainly fetal distress 138 (24.1 %), abnormalities of uterine action 86 (15.0 %), atonic bleedings in IIIrd trimester 37 (6.4 %). Placental abruption was diagnosed in 13 women of prognostic group (2.3 %) (fig. 5).

In 572 women livebirth was in 561, 11 stillbirth (antenatal deaths) and 2 died in early neonatal period, perinatal mortality in this group was 23,2‰. According to table 3, practically healthy were 124 children, that composes 21.1 %, in asphyxia 437 (77.9 %), mild asphyxia 282 (50.3 %), moderate and severe – 155 (27.6 %), 2 neonates died in early neonatal period from this group (one neonate due to acute hypoxia on the background of chronic placental insufficiency complicated by placental abruption, second – on the background of respiratory distress syndrome, intrauterine growth retardation and preterm delivery).

Pregnancy and delivery complications
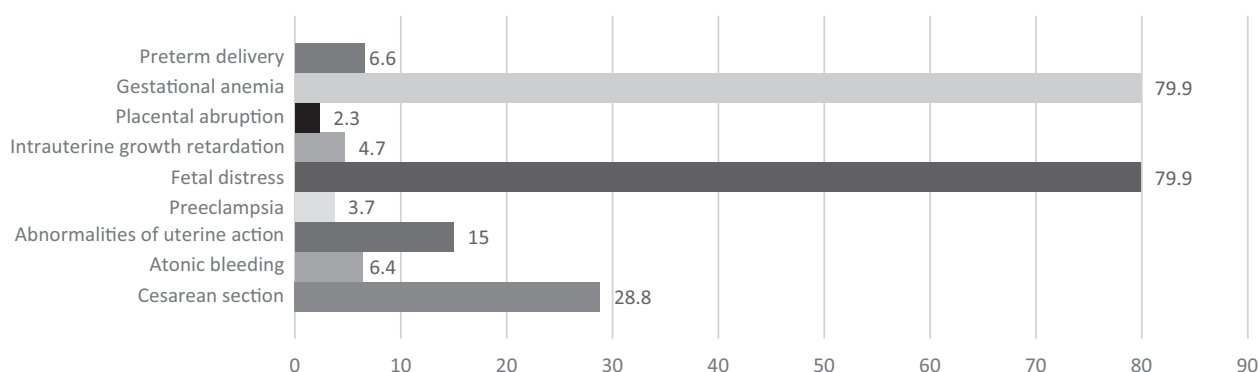
Fig. 5. Gestational and delivery complications in pregnant of prognostic group (%)

According to recent publications, risk factors for the development of Great obstetrical syndromes include anemia, endometriosis, polycystic ovary syndrome (PCOS), early adolescence, chronic arterial hypertension, complications of previous pregnancies with preeclampsia, premature birth [1–3, 6, 16]. Anemia in pregnant women is a common complication of the gestational process in developing countries. It leads to a violation of the supply of nutrients and oxygen to the fetoplacental complex, which causes the development of Great obstetrical syndromes [22, 23].

The risk of great obstetric syndromes development, such as preeclampsia, fetal growth retardation (FGR) and premature birth in primigravida women is inversely proportional to their age [3, 6, 14]. This is a confirmation of the research results obtained by us, namely: young reproductive age of pregnant women, extragenital pathology (represented in most cases by hypertension, diseases of the thyroid gland, gastrointestinal tract and kidneys); complicated gynecological history (menstrual cycle disorders, chronic adnexitis, polycystic ovaries and colpitis); complicated course of gestation (anemia, threat of termination), i.e., that unfavorable background in which there is a high probability of great obstetrical syndromes development.

Thus, based on analyses of clinical characteristic the development of GOS depends mainly on presence of complicated somatic and gynecological history and on the peculiarities of present gestation course. In presented group of pregnant, majority were women of young reproductive age aged 20–30 years, with high incidence of socio-hygienic, medical demographic and socio-psychological problems.

All pregnant had extragenital pathology (majority arterial hypertension, diseases of thyroid gland, gastrointestinal tract and kidneys); complicated gynecological history (disorders of menstrual cycle, chronic adnexitis, polycystic ovarian syndrome and colpitis); complicated gestational course (anemia, threatened pregnancy termination), thus – it is a unfavourable background of high possibility of GOS development. It causes disorders of metabolic reactions processes in the mother-fetus system, stress and further to disruption of fetal adaptation reserves. Perinatal mortality in this group was 23,2‰. It

Table 3
Neonatal outcome from prognostic group (absolute, %)

Index	Prognostic group n=561	
	Absolute	Relative (%)
Practically healthy	124	22,1
Mild asphyxia	282	50,3
Moderate and severe asphyxia	155	27,6

should be noted, that there were no severe extragenital diseases in investigated group of patients.

The course of pregnancy and labor in women, with complications from GOS group, was complicated by threatened pregnancy termination, gestational anemia. Complications as fetal distress, severe preeclampsia, intrauterine growth retardation with decompensated hemodynamic disorders of utero-placental blood circulation caused high incidence of operative delivery in these patients. So, the peculiarities of obstetrical and perinatal pathology in pregnant, who had complications from GOS group, may be used as markers of prognosis of increased obstetrical and perinatal complications risk from maternal and fetal side in these patients.

We assume, the further analyses of functional, instrumental and laboratory parameters of the patients of this group will make it possible to identify the most informative prognostic criteria for the development of GOS, and will allow to develop a more effective method of predicting obstetric and perinatal complications in these women. In our opinion, these features can serve as risk factors for the Great obstetrical syndromes development.

CONCLUSIONS

The identified features of the somatic, reproductive history and obstetric and perinatal pathology in pregnant women who had complications from the great obstetrical syndromes group made it possible to identify the following risk factors for their development: young reproductive age, a high incidence of socio-hygienic, medico-demographic and socio-psychological problems, complicated somatic, gynecological and reproductive history.

In further research, these risk factors will serve as clinical signs for assessing the degree of individual risk for the development of Great obstetrical syndromes.

Information about the author

Lemish Nataliya Yu. – MD, PhD, Associate Professor, Department of Obstetrics and Gynecology, Medical Faculty, State Higher Educational Institution «Uzhhorod National University»; tel.: (050) 560-05-17. *E-mail: lemishny@gmail.com*
ORCID: 0000-0003-0893-8565

Відомості про автора

Леміш Наталія Юріївна – канд. мед. наук, доцент, кафедра акушерства та гінекології, медичний факультет, ДВНЗ «Ужгородський національний університет»; тел.: (050) 560-05-17. *E-mail: lemishny@gmail.com*
ORCID: 0000-0003-0893-8565

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