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INCIDENCE OF OBSTETRIC AND EXTRAGENITAL PATHOLOGY IN VARIOUS-LEVEL OBSTETRIC INSTITUTIONS IN AZERBAIJAN

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The purpose of the work was to study the incidence of obstetric and extragenital pathology in various maternity institutions of the Republic of Azerbaijan for the period 2012-2014: in perinatal centers and district maternity hospitals. The study of obstetric and extragenital pathology in obstetric institutions of various levels of the Azerbaijan Republic for the period 2012-2014 showed that oedema and proteinuria without hypertension were found to 1.2 times more often in women admitted to obstetric regional institutions of the 2nd level, premature rupture of membranes – 4 times more often, urinary tract infection and 4.7 times more often than hospitalized in institutions of the 3rd level. At the same time, in pregnant women hospitalized in level 3 institutions in 2012-2014, clinical manifestations of FNP were 1.1 times more common, and pelvic organ pathologies were 5.6 times more common than in district maternity hospitals (level 2).

Key words: prenatal period, risk group, obstetric pathology, extragenital pathology, hospitalization, perinatal centers.

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ЧАСТОТА АКУШЕРСКОЇ ТА ЕКСТРАГЕНІТАЛЬНОЇ ПАТОЛОГІЇ В РІЗНОРІВНЕВИХ РОДОДОПОМІЖНИХ УСТАНОВАХ АЗЕРБАЙДЖАНУ

Метою роботи було вивчення частоти акушерської та екстрагенітальної патології в різних пологових установах Азербайджанської Республіки за період 2012-2014 років: у перинатальних центральних та районних пологових будинках. Вивчення частоти акушерської та екстрагенітальної патології в акушерських установах різного рівня Азербайджанської Республіки за період 2012-2014 років показало, що набряки та протеїнурія без артеріальної гіпертензії зустрічались у 1,2 рази частіше у жінок, госпіталізованих в районні акушерські установи 2-го рівня, передчасний розрив плідної оболонки – в 4 рази частіше, інфекції сечовивідних шляхів – в 4,7 рази частіше, ніж у госпіталізованих в установи 3-го рівня. Натомість, у вагітних, госпіталізованих в установи 3-го рівня в 2012-2014 роках, клінічні прояви ФНП зустрічались в 1,1 рази частіше, а патології тазових органів – в 5,6 разів частіше, ніж у районних пологових будинках (2-й рівень).

Ключові слова: допологовий період, група ризику, акушерська патологія, екстрагенітальна патологія, госпіталізація, перинатальні центри.

This work is a fragment of the doctoral dissertation “Clinical and pathogenetic features of perinatal losses in the conditions of transition to modern criteria of live birth”

With a combination of extragenital and obstetric pathology, the most unfavorable outcomes of labor are noted: the frequency of preterm labor increases, the risk of untimely discharge of amniotic fluid increases, the frequency of labor abnormalities, acute fetal hypoxia increases, and, as a result, the frequency of pathological labor increases [2, 3, 4, 8]. The development of rational tactics for the management of pregnancy and childbirth, as well as the correct choice of terms and methods of delivery based on a

comprehensive diagnosis and timely correction of somatic disease and pathology of pregnancy will significantly reduce the frequency of perinatal losses [6, 7, 9, 10].

In Azerbaijan, in the framework of the State Program of measures to protect the health of the mother and child (decree of the President of the Republic of Azerbaijan, No. 211 dated 15.09.2006) was adopted "The concept of the reform of perinatal care 2010-2014 according to the principles of regionalization", which created a three-tier system of maternal and developed criteria for admission in obstetric institutions at various levels (Order No. 29 of MH AZ on 19/02/2010). City and district clinical maternity hospitals were assigned to the second-level treatment and prevention institutions (TPI), where pregnant women with minimal risk were hospitalized, women with the threat of premature birth at a gestation period of 34 weeks or more, pregnant women who were expected to give birth to a child in need of neonatal care.

TPI to the third level has identified the agencies where were hospitalized pregnant women with high risk, pregnant with decompensated form of extragenital pathology in pregnant women gestational age of 22 weeks until 34 weeks gestation, pregnant women who expected the birth of a premature baby in need of specialized treatment, emergency resuscitation care.

Despite the clear regionalization, the problem of timely hospitalization of pregnant women with extragenital and obstetric pathology continues to be relevant and requires the development of further protocols and clinical recommendations to optimize obstetric care for pregnant women.

The purpose of the study was to study the structure of obstetric and extragenital pathology in women at risk for perinatal losses who were hospitalized in maternity hospitals of various levels in the Republic of Azerbaijan for the period 2012-2014.

Materials and methods. The medical records of women hospitalized in 2012-2014 were examined retrospectively, in maternity hospitals of the 3rd level – in maternity hospitals of the cities of Sumgait (8615), Ganja (3294), Mingechaur (2050), Shirvan (1379), and in maternity hospitals of the 2nd level-district maternity hospitals in Masallah (3501), Barda (2407), Sabirabad (2394), Shamakhi (1836). It should be noted that the treatment in the second and third level medical institutions was carried out in accordance with the relevant clinical protocols approved by the Ministry of Health of the Republic of Azerbaijan.

During the examination of hospitalized pregnant women were used the following methods of examination: clinical studies of blood and urine leukocyte formula, coagulation, seeding leaking amniotic fluid, ultrasound studies of the fetus and the mother, liver function tests, biochemical blood tests.

The frequency and structure of obstetric and extragenital pathology were analyzed using clinical, statistical, and analytical methods. Statistical analysis of the data was carried out using the X^2 (chi-square) criterion.) For the four-field conjugacy a table was used [1]. At the same time, the level of statistical significance is assumed to be 95 % or higher. To determine the significance level, the table of limit values $x^2(1)$ is used. To calculate the Pearson criterion, the MS Excel 2003 program is used.

Results of the study and their discussion. These studies in obstetric and extragenital pathology in maternity institutions 2nd level are presented in tables 1 and 2. The presence of pregnant women with chronic hypertension was prevalent in the city of Mingachevir and amounted to 3.2 %, the lowest it has been in Shirvan and 2.4 % ($x^2=2.087$; $p>0.05$). The study of the bleeding rate in early pregnancy revealed that it was the highest in Shirvan (2.8 %), the lowest in Ganja (1.7 %) ($x^2=6.043$; $p<0.02$). A similar trend was observed in the study of the frequency of early pregnancy toxicosis: the highest frequency was observed in Shirvan (2 %) and the lowest in Ganja (1.2 %) ($x^2=6.016$; $p<0.02$). Studies of the presence of manifestations of venous insufficiency allowed us to establish a high rate of this pathology in Shirvan (4.2 %) and a low rate in Ganja (2.2 %) ($x^2=15.424$; $p<0.001$).

It should be noted that there is a high rate of infectious diseases of the genitourinary tract in almost all maternity hospitals in the cities of the republic. This indicator ranged from 4.4 % to 5.5 %. At the same time, relatively low rates of diabetes mellitus were observed in maternity hospitals in the cities of the republic: from 0.6 % in Ganja and Sumgait, to 1.1 % in Shirvan. It should be noted that there is a high frequency of edema and proteinuria without hypertension during pregnancy in all maternity hospitals. This obstetric pathology ranged from 12.6 % in Ganja to 16 % in Mingechaur.

Table 1

Incidence of obstetric pathology of women in labor who gave birth in urban maternity hospitals

Name of pathologies	Sumgait, n=8615		Ganja, n=3294		Mingeaur, n=2050		Shirvan, n=1379		P _{min-max} (X ² ; p)
	abs	%	abs	%	abs	%	abs	%	
Pre-existing hypertension (010)	241	2.8±0.2	86	2.6±0.3	65	3.2±0.4	33	2.4±0.4	2.087; p>0.05
Edema and proteinuria without hypertension (012)	1200	14.0±0.4	415	12.6±0.6	328	16.0±0.8	186	13.5±0.9	12.498; p<0.001
Preeclampsia (014)	444	5.2±0.2	150	4.6±0.4	111	5.4±0.5	68	4.9±0.6	2.206; p>0.05
Eclampsia (015)	120	1.4±0.1	41	1.2±0.2	35	1.7±0.3	31	2.3±0.4	7.129; p<0.01
Bleeding in early pregnancy (020)	160	1.9±0.2	56	1.7±0.2	42	2.1±0.3	38	2.8±0.4	6.043; p<0.02
Excessive vomiting of pregnant women (021)	115	1.3±0.1	38	1.2±0.2	32	1.6±0.3	28	2.0±0.4	6.016; p<0.02

Table 2

Incidence of extragenital pathology of women in labor who gave birth in urban maternity hospitals

Name of pathologies	Sumgait, n=8615		Ganja, n=3294		Mingeaur, n=2050		Shirvan, n=1379		P _{min-max} (X ² ; p)
	abs	%	abs	%	abs	%	abs	%	
Venous complications (022)	211	2.5±0.2	72	2.2±0.3	61	3.0±0.4	58	4.2±0.6	15.424; p<0.001
Urogenital tract infections (023)	412	4.8±0.2	182	5.5±0.4	102	5.0±0.5	61	4.4±0.6	2.175; p>0.05
Diabetes mellitus (024)	51	0.6±0.1	19	0.6±0.1	18	0.9±0.2	15	1.1±0.3	4.256; p<0.05
Other (025, 026, 028)	130	1.5±0.1	47	1.4±0.2	36	1.8±0.3	34	2.5±0.4	6.782; p<0.01

According to the retrospective analysis, the features of obstetric and extragenital pathology of women in labor in Masallah, Bard, Sabirabad and Shamakhi were determined. The results of the study of the frequency of obstetric and extragenital pathology in maternity hospitals of the districts of the republic (level 2 medical institutions) for the period 2012-2014 are presented in tables 3 and 4.

Chronic hypertension was more common in Bard, Masallah, Sabirabad, and Shamakhi. At the same time, the frequency of chronic hypertension was almost the same and ranged from 2.3 % – 2.5 % ($\chi^2=3.104$; $p>0.05$).

As can be seen from the table, the level of preeclampsia and eclampsia in the studied areas was low, which, apparently, is the result of effective antenatal prevention of hypertensive disorders during pregnancy, as well as the good health of the female population of reproductive age, and the timely hospitalization of pregnant women in obstetric (maternity) institutions of the 2nd and 3rd level, which provided specialized care to pregnant women with extragenital pathology.

The study of the structure of extragenital pathology of women in labor who gave birth in urban maternity hospitals found that the frequency of venous complications was 15.424 ($p<0.001$), urogenital tract infections 2.175 ($p>0.05$), diabetes mellitus 4.256 ($p<0.05$) and other diseases classified in categories 025, 026, 028 was 6.782 ($p<0.01$).

Table 3

Features of obstetric pathology in some areas of the Republic in 2012-2014

Name of pathologies	Masallah, n=3501	Bard, n=2407	Sabirabad, n=2394	Shamakhi, n=1836	P _{min-max} (X ² ; p)
	abs (%)	abs. (%)	abs. (%)	abs. (%)	
Pre-existing hypertension	89 (2.5±0.3)	78 (3.2±0.4)	58 (2.4±0.3)	42 (2.3±0.4)	3.104; p>0.05
Edema and proteinuria without hypertension	401 (11.5±0.5)	360 (15.0±0.7)	291 (12.1±0.3)	214 (11.7±0.8)	15.907; p<0.001
Preeclampsia	14 (0.4±0.1)	11 (0.5±0.1)	6 (0.3±0.1)	2 (0.1±0.1)	5.349; p<0.025
Eclampsia	11 (0.3±0.1)	9 (0.4±0.1)	3 (0.1±0.1)	2 (0.1±0.1)	3.946; p<0.05
Bleeding in early pregnancy	12 (0.3±0.1)	9 (0.4±0.1)	7 (0.3±0.1)	4 (0.2±0.1)	1.420; p>0.05
Excessive vomiting of pregnant women	71 (2.0±0.2)	32 (1.3±0.2)	50 (2.1±0.3)	32 (1.7±0.3)	3.680; p>0.05

At the same time, the frequency of preeclampsia in maternity hospitals of the republic's cities (level 3 health facilities) did not differ significantly and amounted to 4.6 % – 5.4 % ($x^2 = 5.349$; $p < 0.025$), and the level of the frequency of eclampsia ranged from 1.2 % in Ganja to 2.3 % in Shirvan ($x^2 = 3.946$; $p < 0.05$).

Table 4

Features of extragenital pathology in some regions of the republic in 2012-2014

Name of pathologies	Masallah, n=3501	Bard, n=2407	Sabirabad, n=2394	Shamakhi, n=1836	Pmin-max (X ₂ ; p)
Venous complications	105 (3.0±0.3)	54 (2.2±0.3)	72 (3.0±0.4)	41 (2.2±0.3)	2.451; $p > 0.05$
Urogenital tract infections	98 (2.8±0.3)	81 (3.4±0.4)	89 (3.7±0.4)	81 (4.4±0.5)	10.166; $p < 0.005$
Diabetes mellitus	12 (0.3±0.1)	11 (0.5±0.1)	9 (0.4±0.1)	5 (0.3±0.1)	0.518; $p > 0.05$
Other(025, 026, 028)	36 (1.0±0.2)	28 (1.2±0.2)	31 (1.3±0.2)	18 (1.0±0.2)	0.644; $p > 0.05$

It should be noted almost insignificant difference in the incidence of venous complications in the obstetric institutions of the Republic: in Masalli and Sabirabad 3 %, Barda and Shamakhi is 2.2 % ($x^2 = 2.451$; $p_{min-max} > 0.05$).

Urinary tract infection averaged 10.166; ($p < 0.005$), while the incidence of diabetes – 0.518 ; ($p > 0.05$).

Fig. 1 presents a comparison of the incidence of amniotic fluid and fetal membranes in women in labor who gave birth in compare maternity hospitals of Azerbaijan in 2012 – 2014 y.y.

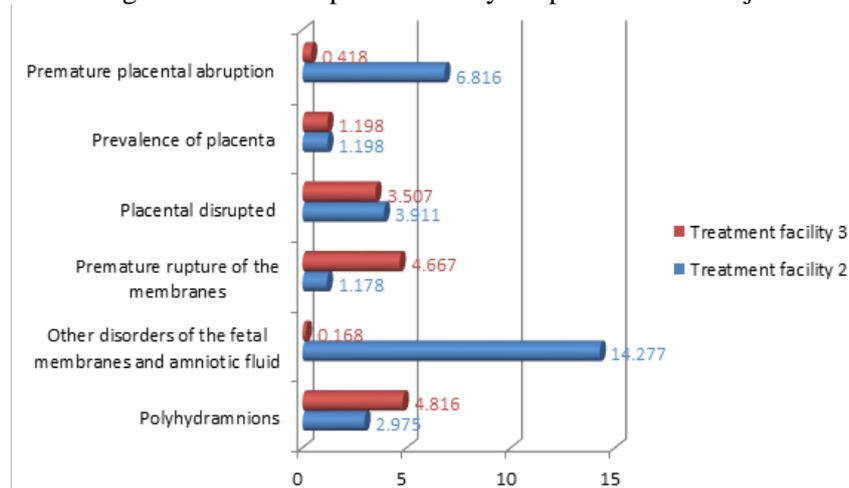


Fig. 1. Incidence of pathology of the placenta, amniotic fluid and fetal membranes in women in labor who gave birth in the 2nd-3rd level medical institutions of Azerbaijan in 2012 – 2014

As can be seen from fig. 1, the frequency of polyhydramnios in the cities of the republic was on average 2.975; ($P_{min-max} > 0.05$). In district maternity hospitals, this indicator was 2 times higher and amounted to 4.816 ($P_{min-max} < 0.05$). The frequency of pathology of amniotic fluid and fetal membranes was higher in TPI 2 14.277, which is 14 times higher than this indicator in TPI 3. ($p_{min-max} < 0.001$).

The study of the frequency of premature rupture of the fetal membranes was noted on average in the TPI 2 of 1.178, with 4.677 in the TPI 3 ($p < 0.05$). The frequency of placental disorders and cases of placental abruption occurred in both institutions with almost the same frequency.

In the current conditions of health care reform in the Republic of Azerbaijan, the three-level system of maternity care is an alternative link in the development of health care.

Studies of Yensegenova Z. Zh et al., conducted in 2014-2016 in a day obstetric and gynecological hospital in Kazakhstan, which treated pregnant women with various extragenital pathologies and pregnancy complications, revealed the presence of chronic non – specific kidney diseases in 59.7 % of patients, cardiovascular diseases in 12.3 % of patients, chronic non-specific lung diseases in 4 % of patients, and other diseases in 0.7 % of patients [2]. According to the research of Sitnikova L. N. diseases of the urinary system were observed in 41.3 % of young first-time mothers, infectious and parasitic diseases – in 22.7 % of cases, in 36.0 % – disorders of the autonomic nervous system, in 19.3 % – respiratory organs. Combined extragenital pathology occurred in 40.7 % of women. Among the complications of pregnancy in young primiparous women, preeclampsia prevailed – 81.7 % of cases, almost half of the women had anemia (47.5 %), placental insufficiency of varying severity – in 87.3 % of cases, kidney diseases during pregnancy were observed in almost every third young primiparous woman (32.3 %), and gestational pyelonephritis prevailed. The authors also note that the incidence of gestational diabetes, hypertension, preeclampsia, and placental previa increases in first-time mothers of late reproductive age. Preeclampsia was observed in almost every third primiparous woman of late reproductive age (31.6 %), and 1.5 % of women had severe forms-preeclampsia and eclampsia [5].

Conclusions

Thus, the study on the incidence of obstetric and extragenital pathology in women hospitalized in 2012-2014. In the maternity institutions of the 3rd level and the 2nd level, it was possible to note the different frequency of extragenital and obstetric pathology.

Edema and proteinuria without hypertension were 1.2 times more common in women hospitalized in district maternity hospitals that are level 2 institutions, premature rupture of the fetal membranes was 4 times more common, and urinary tract infections were 4.7 times more common than in those hospitalized in level 3 institutions.

In 2012-2014, more cases of urinary tract infections were registered in level 2 health care facilities. Clinical manifestations of FNP and pelvic organ abnormalities were less frequent compared to level 3 institutions, which is the result of reasonable hospitalization of these pregnant women and women in labor in higher-level maternity institutions.

In pregnant women hospitalized in level 3 institutions in 2012-2014, the clinical manifestations of FNP were 1.1 times more frequent and pelvic organ abnormalities were 5.6 times more frequent than in district maternity hospitals (level 2).

It was found that in maternity hospitals of the 3rd level, pregnant women with the same frequency have edema and proteinuria without hypertension, premature rupture of the fetal membranes, clinical manifestations of fetoplacental insufficiency, urinary tract infections.

Thus, the results of the study can be used to plan and improve the organization of medical care for pregnant women of high perinatal risk groups in maternity hospitals of various levels. Optimization of health services maternal and child are necessary for the establishment of a coordinated system of obstetric and neonatal care, providing targeted funding and logistical obstetric hospitals, to pregnant women at risk for perinatal losses and their newborns were more adequate medical care.

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