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Studying The Structure Of Risk Factors In Preterm Birth In Pregnant Women Over 35

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Annotation:

Preterm birth (PB) remains one of the most urgent problems of modern obstetrics. The article discusses the frequency of preterm birth, as well as the study of the structure of risk factors for preterm birth in women over 35 years of age. The anamnesis of the life of pregnant women and the medical history of childbirth were studied. 2020,2021, 2022. The structure of risk factors for preterm birth in all pregnant women in the Osh city maternity hospital in the first quarter of the year, including women over 35 years old, was studied.

Key words: preterm birth, risk factors, preeclampsia, chorioamnitis, premature rupture of amniotic fluid.

Abstract:

Premature birth remains one of the most urgent problems of modern obstetrics. The article discusses the frequency of preterm birth, as well as the study of the structure of risk factors for preterm birth in women over 35 years of age. The anamnesis of the life of pregnant women and the medical history of childbirth were studied. 2020,2021, 2022. The structure of risk factors for preterm birth in all pregnant women in the Osh city maternity hospital in the first quarter of the year, including women over 35 years old, was studied.

Key words: preterm birth, risk factors, preeclampsia, chorioamnitis, premature rupture of amniotic fluid.

Relevance:

Preterm birth (PB), according to WHO criteria, are births that occur from 22 to 37 completed weeks of pregnancy with a fetal weight of 500 grams. Premature births are one of the prevailing factors of the main causes of perinatal morbidity and mortality in the world, in the development of newborn pathology, and they cause serious damage to any state of a medical, demographic, economic,

social nature [1, 7, 8]. Pregnant women whose pregnancy outcome may be premature birth, and especially if the outcome is the additional loss and death of a child, experience fear of a possible recurrence of the next pregnancy, the rejection of a subsequent pregnancy, which leads to serious conflicts in the family and society [2,6,11,14,17].

Preterm birth complicates the birth of approximately 15 million children every year, according to WHO [3, 5, 7, 16]. Of these children, more than one million (1.1 million) die shortly after birth; many surviving children suffer from various types of life-long physical and neurological disabilities or experience problems in learning and adapting to social life, which often involves high costs for families and society" [6,7,9,12]. According to the results of Norwegian researchers, there are data that preterm births have the highest incidence of congenital malformations (CM), and which, in turn, are the cause of high perinatal and infant mortality among premature babies.

According to the data by Williams accounts for 9,5% of all births, varies depending on the gestational age: from 22 to 28 weeks of gestation (5–7% of all preterm births), from 29 to 34 weeks of gestation (33–42%), in the period from 34 to 37 weeks of pregnancy (50-60%) [8,16].

In 25–38% of cases, preterm birth is preceded by premature rupture of the membranes, and according to G.M. Savelyeva, the frequency of PR is 5-18% of all births [7,11], and does not tend to decrease. The share of premature births from 22 to 28 weeks accounts for 5-7% (of all PR); from 29 to 34 weeks - 33-42%; from 35 to 37 weeks - 50-60%.

Many researchers consider the causes of PB to be unclear, however, this problem is currently being actively studied. It has been established that spontaneous PB is a syndrome with numerous predisposing factors and causes, including infection, fetal hypoxia, endocrine / paracrine changes in the placenta and fetal membranes. Risk factors for the development of idiopathic PB are both socio-demographic and medical factors.

Socio-demographic risk factors: in recent years, there has been an increased internal migration of a significant contingent of the population to large cities of the republic in the Kyrgyz Republic. Thus, population growth, shortage of housing stock, limited sources of water supply, heat and power supply capacities, sewerage network and sewage treatment plants and other utilities, against the backdrop of a sharply increased anthropogenic and man-made (motor transport) load on the urban environment, have a pronounced negative impact on biosphere and human health [5,10].

A sharp increase in the number of motor vehicles, along with the previously listed negative consequences, led to an increase in the role of the noise load factor, which led to an increase in the incidence of neuroses, psychosomatic diseases, including diseases of the reproductive system. At the same time, the emergence of additional television and radio broadcasting channels (including private radio stations), new types of cellular communications, computerization, the introduction of modern medical technologies and others have actualized the problem of non- ionizing radiation , which was previously insignificant for Kyrgyzstan , as well as a low socio-economic situation, unfavorable working conditions (exposure to benzene) , psycho-emotional stress [5], heavy smoking, drug use, nationality, as well as the age of parents under 17 and over 34 [1, 2, 6, 7 , 8].

Medical factors that occurred before pregnancy: history of PB (one history of PB increases the risk of their recurrence by 4 times [3,7,8], two PB - by 6 times) [4, 7], recurrent miscarriage , aggravated obstetric history , high parity of childbirth, anomalies of the genitourinary system, extragenital diseases.

Medical factors that have arisen during pregnancy are also important: multiple pregnancy, polyhydramnios, oligohydramnios, isthmicocervical insufficiency, bleeding during pregnancy, placental pathology (previa , abruption), premature rupture of membranes, hyper- and hypotension, preeclampsia , anemia, fetoplacental insufficiency [3],

Considering the current problem of COVID -19, the pandemic can be simultaneously attributed to social and medical risk factors for PB , since the impact of the COVID -19 pandemic on the economies of countries has led to poor monitoring of the course of pregnancy, triage during hospitalization of pregnant women worsened the diagnosis of PB, as the necessary time to determine obstetric tactics, it took to diagnose possible COVID - 19 infection , which can be defined as a social factor, and according to recent studies, it is assumed that coronavirus infection can also negatively affect the course of pregnancy in women infected at the time of pregnancy and lead to the development various complications such as PB accompanying premature rupture of membranes [9].

Purpose of the study : **To study the structure of risk factors for preterm birth in pregnant women over 35 years old in the maternity hospital in Osh**

Methods and materials of the study: In order to study the risk factors for PB, the history of

childbirth with preterm birth was selected for the first quarter in 2020, 2021, 2022 of pregnant women aged 35 years and older. In 2020, total births - 2372, premature births - 461 (19.4%) , of which 85 (18.4%) are over 35 years old; in 2021, total births - 1939, premature births - 363 (18.7%) , of of them over 35 years old - 44 (13%), in 2022 the total number of births - 1959, premature births - 270 (13.8%) , of which over 35 years old - 38 (14%).

Table №1
The structure of all births for the first quarter of 2020, 2021,2022

№	Indicators	2020	%	2021	%	2022	%	Arithmetic mean)	Average percentage (%)
1	Total births	2372	100	1939	100	1959	100	2090	100
2	Self-term delivery	1911	80.6	1576	81.3	1689	86.2	1725.3	82.7
	Premature birth from 22-36 weeks + 6 days	461	19.4	363	18.7	270	13.8	364.6	17.3
3	Premature birth from 34 weeks p-36 weeks + 6 days	334	14.08/ 72.45	276	14.23/ 76.03	141	7.2/ 52.2	250.3	11.83/ 66.89
4	Early delivery from 28 weeks -33 weeks	88	3.7/ 19.08	52	2.7/ 14.3	96	4.9/ 35.5	78.6	3.7/ 22.96
5	Very early birth from 22 to 27 weeks	39	1.6/ 8.45	35	1.8/ 9.6	33	1.6/ 12.2	35.6	1.6/ 10.08

From the presented table №1 and diagram № 1, the arithmetic mean indicators of preterm birth for 3 years in the first quarter (January , February, March) are 17.3%, which corresponds to the statistics of Savelyeva G.M. (5-18%) . Of the preterm births, preterm births from 34 weeks p-36 weeks + 6 days (66.9%) prevail in structure, which is compared with the data of Savelyeva G.M. slightly higher (50-60%), in second place are early births from 28 weeks to 33 weeks (22.9%), which is relatively lower by 10-20% according to this author (32-42%), very early births from 22 weeks to 27 weeks (10.0%), which is also higher than the data suggested by this author (5-7%).

Diagram №1

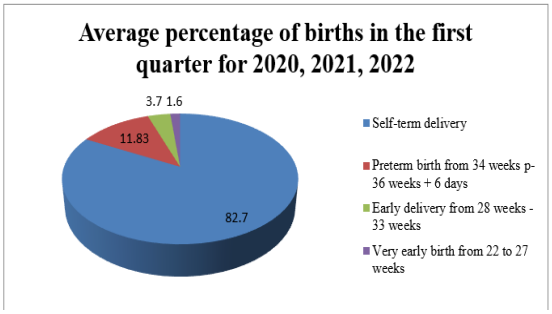


Table №2.
The structure of childbirth for 2020, 2021, 2022 in the Osh City Perinatal Center of the Kyrgyz Republic

№	Indicators	2020	including pregnant women over 35 years old	%	2021	including pregnant women over 35 years old	%	2022	including pregnant women over 35 years old	%
1	Total births	2372	410	100/ 17.4 %	1939	264	100/ 13.6 %	1959	208	100/ 10.6 %
2	Self-term delivery	1911	325	73/17	1576	220	76/14	1689	170	86.2 / 10.06%
3	Premature birth from 22-36 weeks + 6 days	461	85	100/18.4%	363	44	100/ 12.12 %	270	38	100/ 14.07%
4	Premature birth from 34 weeks p-36 weeks + 6 days	334	47	100/ 14.07 %	276	31	100/ 11.2 %	141	15	100/ 10.6 %
5	Early delivery from 28 weeks -33 weeks	88	27	100/ 30.6 %	52	9	100/ 17.3 %	96	17	100/ 17.7 %
6	Very early birth from 22 to 27 weeks	39	11	100/ 28.2 %	35	4	100/ 11.4 %	33	6	100/ 18.1 %

Chart №2: Comparison of the total birth-to-birth rate of women over 35 in 2022

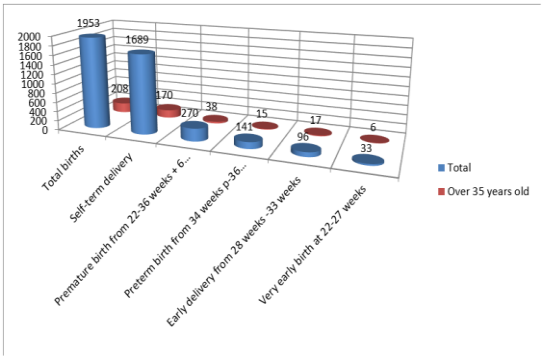


Chart №3: Comparison of the total birth-to-birth rate of women over 35 in 2021

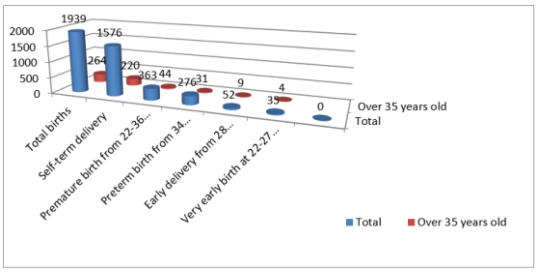
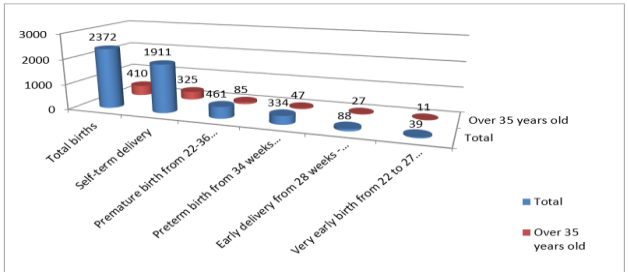


Chart №4: Comparison of the total birth-to-birth rate of women over 35 in 2022



From the above table №2 and diagrams № 2,3,4, the structure of preterm birth in women over 35 years of age was studied, and it was found that preterm birth has the highest rates of data for 2020, which we associate with the onset of the pandemic With COVID - 19, which account for 18,4%. At terms of 28-32 weeks, childbirth accounted for 30,6%, very early birth at terms of 22-27 weeks accounted for 28,2%.

Results of discussion : Social, medical (during pregnancy and childbirth) risk factors for PB were studied, the average statistics for the first quarter in three years is 2090 births, of which 364 premature births, over 35 years old - 55 cases.

Table №3

Social risk factors for PB older than 35 years

№	Years / Risk factors	Total PB	Pregnant women with PB over 35 years of age											
			2020(85)				2021(44)				2022(38)			
		490	preterm birth	early birth	very early childbirth	%	preterm birth	early birth	very early childbirth	%	preterm birth	early birth	very early childbirth	%
1	Low socio-economic status	137	40	25	9	54.1	21	9	4	24.8	10	13	6	21.1
2	Heavy smoking	15	3	2	1	33.3	2	1	2	33.3	2	0	3	33.3
3	Unfavorable working conditions (exposure to benzene), work with tobacco, in the field	122	35	21	8	52.4	19	8	3	24.5	11	12	5	22.9
4	Psycho-emotional stress	133	42	22	9	54.8	20	7	4	23.3	12	13	4	21.8
5	Migration	83	22	15	14	61.4	5	7	8	24	F4	5	3	14.4

Diagram №5

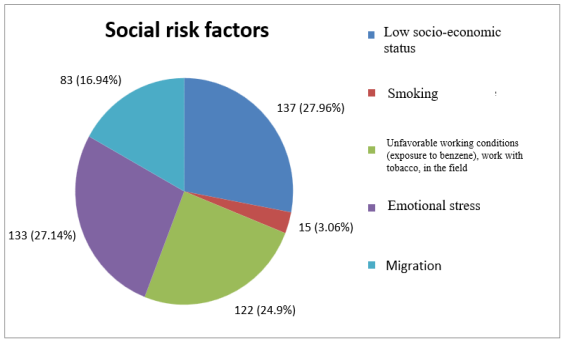


Diagram №6

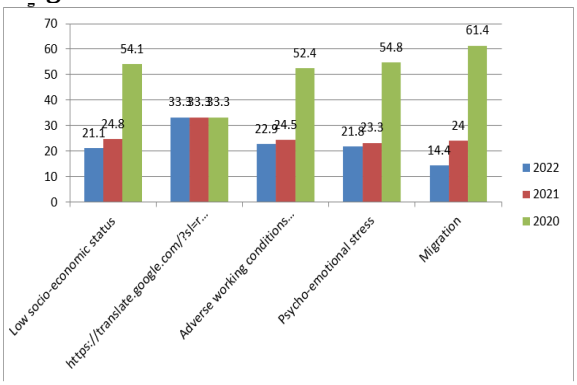


Table №3, diagrams №5; 6 are presented: the largest percentage corresponds to a low socio-economic status 137 (27,9%), psycho-emotional stress is in second place - 133 (27,1%), unfavorable working conditions are in third place (exposure to benzene) , working with tobacco, on the field - 122 (24,9%), and also due to the increased migration of citizens, the percentage of migration corresponds to 83 (16,9%), and it can also be assumed that all of the listed risk factors for more than 50% showed 2020, this is apparently due to the start of the COVID -19 pandemic , more fear emotions also contributed to the onset of premature birth.

Table №4

Medical Risk Factors in Pregnancy

№	Years / Risk factors	Total number of PB	Pregnant women with PB over 35 years of age											
			2020 (85)				2021(44)				2022(38)			
		480	preterm birth	early birth	very early preterm birth	%	preterm birth	early preterm birth	very early preterm birth	%	preterm birth	early preterm birth	very early preterm birth	%
1	Recurrent miscarriage	98	23	22	3	48.9	17	8	3	28.5	7	1 1	4	22.4
2	Complicated obstetric history	91	34	25	2	67	18	7	2	29.6	11	1 3	4	29.6
3	High birth parity,	120	35	21	8	53.3	19	8	3	25	11	1 2	3	21.6
4	Urinary system anomalies	5	2	0	0	40	0	0	1	20	2	0	0	40
5	Extragenital diseases _	43	4	4	3	25.5	5	7	8	46.5	4	5	3	27,9
6	Multiple pregnancy	6	2	2	0	66.6	0	0	0	0	2	0	0	33.3
7	Isthmicocervical insufficiency	28	3	4	2	32.1	2	1	2	17.8	7	4	3	50
8	Oligohydramnios	8	3	0	0	37.5	0	1	2	37.5	0	2	0	25
9	Polyhydramnios	23	5	2	0	30.4	4	0	0	17.3	5	3	4	52.1
10	Fetoplacental insufficiency	58	4	3	3	17.2	8	7	5	34.4	11	9	8	48.2

Diagram №7

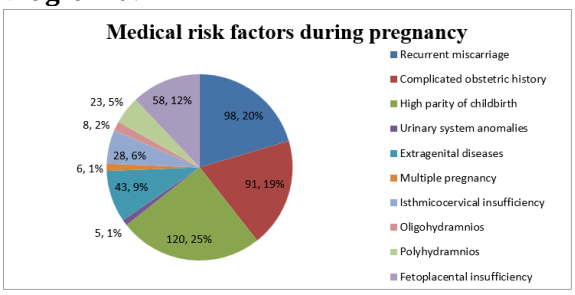
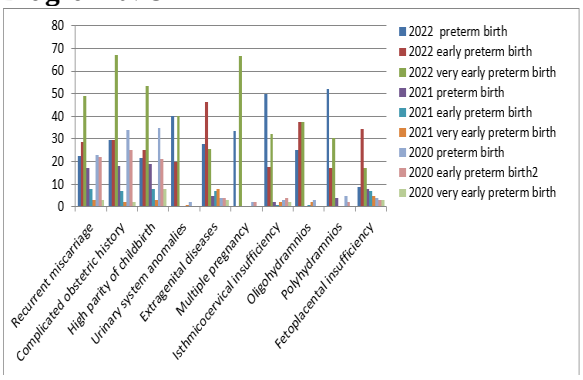


Diagram №8



In the section of the analysis of medical risk factors during pregnancy, according to Table №4, Diagrams № 7,8, 10 nosologies that caused preterm birth were considered, taking into account the parity of births in Central Asian countries , and in our studies it took first place 120 cases, (25%) then habitual miscarriage 98 cases (20%), aggravated obstetric history 91 cases (19%) , extragital pathology 43 cases (9%), pay great attention to fetoplacental insufficiency58 (12%).

Table №5
Medical risk factors in childbirth

№	Years / Risk factors	Total PB	Pregnant women with PB over 35 years of age											
			2020(85)				2021(44)				2022(38)			
		389	preterm birth	early preterm birth	very early preterm birth	%	preterm birth	early preterm birth	very early preterm birth	%	preterm birth	early preterm birth	very early preterm birth	%
1	Pathology of the placenta (previa , abruption)	45	12	3	0	33.3	11	5	0	35.5	10	4	0	31.1
2	Premature rupture of membranes	83	27	11	1	46.9	11	10	2	27.7	11	8	2	25.3
3	Preeclampsia	54	22	3	0	46.2	11	3	0	25.9	10	5	0	27.7
4	Anemia	132	41	22	9	54.5	20	7	4	23.4	12	13	4	21.9
5	Chorioamnionitis in childbirth	15	3	2	1	40	3	1	0	26.6	4	1	0	33.3
6	SARS and Covid-19 during pregnancy and childbirth	60	12	16	3	51.6	12	11	3	43.3	2	1	0	5

Diagram №9

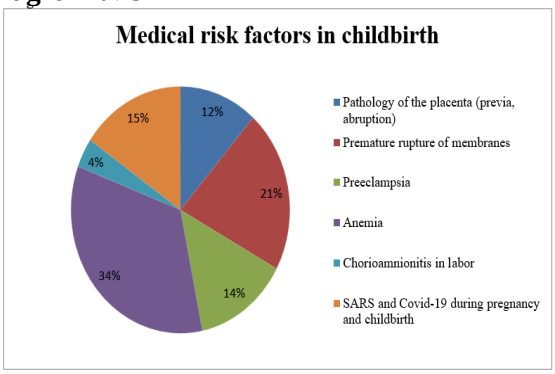
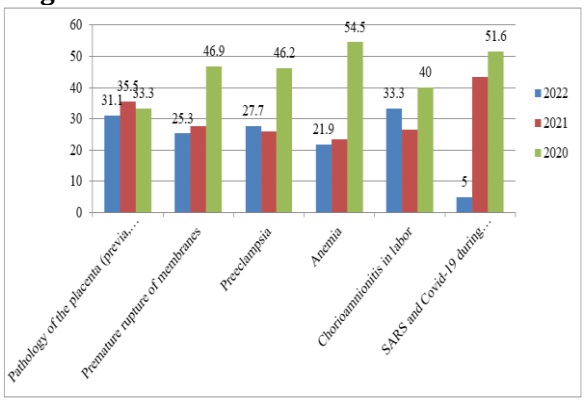


Diagram №10



And also in table №5, Diagrams №9,10, medical risk factors in childbirth are presented, it consists of six nosologies, anemia is in the first place 132 cases (34%), the next place is occupied by premature rupture of the membranes 83 cases (21%) E.K. Ailamazyan **, in 25–38% of cases, preterm birth is preceded by premature rupture of membranes and** , according to data Williams 35% , a significant place is occupied by ARVI and Covid-19 during pregnancy and childbirth 60 cases (15%), preeclampsia 54 cases (14%) according to Williams Obstetrics-24th is 13% , pathology of the placenta (previa , abruption) 45 cases (12%), according to Williams 3%.

Thus , according to statistics, preterm births account for 17.3%, of which preterm births from 34 weeks n-36 weeks + 6 days make up 66.89% , early births from 28 weeks -33 weeks are 22.96% very early birth from 22 to 27 weeks 10.08%. These rates have risen since the onset of the COVID-19 pandemic.

Conclusions:

The most important risk factors for PB in the Osh City Perinatal Center of the Kyrgyz Republic are:

1) Social factors: low socio-economic status 137 (27.9%), psycho-emotional stress in second place -133 (27.1%), unfavorable working conditions (exposure to benzene), work with

tobacco, in the field in third place -122 (24.9%), and also due to the increased migration of citizens, the percentage of migration corresponds to 83 (16.9%);

2) Medical risk factors in pregnancy that caused preterm birth, given the parity of births in Central Asian countries, more , and in our studies it took first place in 120 cases, (25%), then recurrent miscarriage in 98 cases, (20%), aggravated obstetric history 91 cases (19%), extragital pathology 43 cases (9%);

3) Medical risk factors in childbirth in the first place is anemia 132 cases (34%), the next place is occupied by premature rupture of the membranes 83 cases (21%), a significant place is occupied by ARVI and Covid-19 during pregnancy and childbirth 60 cases (15%) , preeclampsia 54 cases (14%), pathology of the placenta (previa , abruption) 45 cases (12%),

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