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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

FEATURES OF THE ASSOCIATION BETWEEN ABDOMINAL BIRTH AND PERINATAL LOSSES

Speciality: 3215.01 – Obstetrics and gynecology

Field of science: Medicine

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INTRODUCTION

Actuality and the processing degree of the subject. Caesarean section is an ancient surgical procedure for saving the life of the fetus and mother. Its clinical indications are broad, mostly objective, and recently surgeries are being performed on the basis of subjective opinions of women and doctors in most cases[1;2]. The frequency of abdominal births was less than 0.5% in the 1980s, but in recent years this method has been used very intensively in Azerbaijan. According to the State Statistics Committee of Azerbaijan Republic, in 2000 year 3.2% and in 2015 year 27.9% of all births was done by caesarean section. Experts from the World Health Organization believe that when the frequency of abdominal births exceeds 15%, their role in reducing prenatal losses decreases[3]. Against the background of a sharp increase in abdominal births, its complications have not decreased.[4;5] In order to prevent problems in this regard, relevant amendments have been made to the Law of the Republic of Azerbaijan "On protection of Public Health in Azerbaijan". The relevant liabilities for illegal caesarean section in the country are pretended by Code of Administrative Offenses. The increase in abdominal births is observed in most countries of the world.[1;6;7]

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[1]Long, Q. Caesarean section rates in Mozambique / Q.Long, T.Kempast, T.Madede [et al.] // BMC Pregnancy and Childbirth, - 2015. 15, - p.253.

[2]Yashioka – Maeda, K. Caesarean section by maternal age group among singleton deliveries and primiparous Japanese women: a secondary analysis of the WHO Global Survey on maternal and perinatal Health / K Yashioka – Maeda, E.Ota, T.Ganchimeg [et al.] // BMC Pregnancy and Childbirth, - 2016. 16, - p.39.

[3]World Health statistics, 2015. WHO, - 2015. - p.164

[4]Davey, M., King, J. Caesarean section following induction of labour in uncomplicated first birth – a population – based cross – sectional analysis of 42.050 birth // BMC Pregnancy and Childbirth, - 2016. 16 (92). doi: 10.1186/s12884-016-0869-0.

[5]Herstad, L. Elective cesarean section or not? Maternal age and risk of adverse outcomes at term: a population – based registry study of low – risk primiparous women / L.Herstad, K.Klungsoyr, R.Skjaven [et al.] // BMC Pregnancy and Childbirth, - 2016. 16, - p. 230.

[6]Wloch, C. Cost–benefit analysis of surveillance for surgical site infection following caesarean section / C.Wloch, A.J.Van Hoek, N.Green [et al.] // BMJ Open, -2020. 10, - p.036919.

[7]Sorrentino, F. Caesarean Section on Maternal Request-Ethical and Juridic Issues: A Narrative Review / F.Sorrentino, F.Greco, T.Palieri [et al.] // - Kaunas: Medicina, - 2022. 58(9), - p.1255. doi: 10.3390/medicina58091255.

Changes in reproductive behaviour, the role of socio-psychological development of society and other factors are shown as the reasons for this are the deterioration of women's health.[8;9] Observations show that the rate of change in the frequency of abdominal births differs in developed and developing countries. The frequency of abdominal births in the United States varies depending on the type of maternity hospital, the woman's race, age, the financial cost of the operation, the professionalism of medical care.[1] The authors prepared the map of the country according to the level of this indicators, taking into account the size of the regional difference in the frequency of abdominal births, and drew attention to regional problems. In China, the specific rate of abdominal births performed at the insistence of women is more than 405.[7]

Italian scientists have proven the influence of a woman's marital status (widow, divorced and married), education and entragenital diseases (diabetes, arterial hypertension, thyroid disease, lung pathology) on the likelihood of abdominal birth.[9] There are many scientists who explain the increase in abdominal births by the satisfactory health care, especially obstetric care services. A large-scale study in Shanghai shows that the number of caesarean operations performed without a clinical prescription is greater than the number of clinically performed caesarean operations.[9] It is estimated that in 44.4% of women whose first birth is vaginal and whose second birth is abdominal, the preference for surgery is subjective and associated with inspiration. The frequency of abdominal births in the European Union is also significantly differrent. 14.8% of single pregnancies in the Netherlands ended by caesarean section, 83.4% in Austria, 39.6% of multiple pregnancies in the Netherlands, and 83.4% in Austria. It is noteworthy that Nordic countries use caesarean section 1.5 times less (<18% and >32%, respectively) than the United States, and thanks to this the rate of stillbirths and neonatal mortality (<3.6% and >4.9 ‰) is significantly less.

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[8]Abebe, F.E.Factors leading to cesarean section delivery at Felegehiwot referral hospital Northweast Ethiopia: a retrospective record review / F.E.Abebe, A.W.Ceebeyehu, A.N. Kidane [et al.] // Reproductive Health, - 2016. 13(6).

[9]Li, C., Liu, Y., Zhang, W. Joint and independent associations of gestational weight gain and pre-pregnancy body mass index with outcomes of pregnancy in chinese women: a retrospective cohort study // PLoS One, - 2015. 10, e0136850.

The incidence of abdominal births in the Republic of Azerbaijan is higher than in Northern Europe and close to the level of the United States. Its positive and negative role for our country has not been assessed. Therefore, it is important to identify the factors affecting the frequency of abdominal births in Azerbaijan, to assess the complications of caesarean section and to study the role of operative activity in reducing prenatal losses in obstetric practice.

Object and subject of the study. Women giving birth to single and multiple fetuses with abdominal delivery were objects of the study, their clinical features, indications for abdominal delivery and outcome of delivery are the subject of the study.

The purpose of the study. To assess the frequency, structure of indications, complications and prenatal losses in the context of the new legal regulation of caesarean section.

Methods of study: Methods such as laboratory examinations, bacteriological examinations of microflora, ultrasound examination, morphological examinations (gravimetry), cardiotocographic examination, assessment of the condition of the fetus have been used in the study.

The main provisions submitted to the defence:

- The new mechanism of legal regulation of caesarean section did not significantly affect the frequency of its application;
  The clinical structure of the frequency, dynamics and causes of abdominal births is not stable and depends on the type of maternity facilities;
- The risk of prenatal pathology and loss varies in different di-
- ections against the background of different prevalence of abdominal births;
- The complication risks of abdominal births are high and they should be considered when planning operative activities;
- Taking into account the risk factors and predictors of complications of abdominal births there are opportunities to optimize them.

The problems solved by the study:

- Determining the dependence of the frequency and dynamics of abdominal births on the type of maternity facilities;
- Assessment of clinical features, structure of causes and risk

- To study of the probability of prenatal losses and pathologies against the background of changes in the frequency of abdominal births;
- To detect the frequency, structure of complications and risk factors of abdominal births;
- Substantiation of possibilities of optimization of abdominal births.

Scientific innovations of results of the study:

- For the first time the characteristics of the change in the frequency of abdominal births depending on the type of obstetric facilities after the introduction of a new mechanism were revealed in the legal regulation of caesarean section;
- The role and place of clinical indications for abdominal births and risk factors for their change have been identified;
- Features of prenatal losses and pathologies associated with an increase in the frequency of abdominal births are shown;
- The frequency and predictors of complications during labor after abdominal births were determined, the structure of clinical forms was shown and risk factors were identified;
- The possibility of optimizing abdominal births has been proven.

Scientific and practical significance of the study:

- Taking into account the objective reasons for the need for abdominal delivery, the creation of adequate capacity in regional maternity hospitals for caesarean section is justified;
- In order to reduce the likelihood of emergency abdominal births, early detection of indications for caesarean section in gynecological clinics and planning of abdominal births in the antenatal period;
- Substantiate the need for autohemotransfusion and antibacterial prophylaxis for reducing the risk of complications of abdominal births;
- Possibilities to determine the prognostic significance of complications on the basis of risk predictors of abdominal births' complications and to plan appropriate preventive measures are shown.

Approbation of the dissertation work. The results of the dissertation work was presented in at the International Correspondence

Scientific-Practical Conference (Moscow, 2016), Scientific-Practical Conference devoted to anniversary of A.Aliyev (Baku: – 2020 and 2021). The initial discussion was conducted at the inter-department meeting of the State Advanced Training Institute named after A.Aliyev (Department of Obstetrics and Gynecology, Pedagogy, psychology and health organization and management with a foreign language course, CSTL) (protocol No.7, 07 june 2022). Dissertation approval was reported and evaluated at the ED 2.06 Dissertation scientific seminar (April 22, 2025; protocol No.5) at Azerbaijan Medical University.

The main findings of the research have been published in 5 journal articles, including two in Russia (in journals listed by the Higher Attestation Commission of the Russian Federation), 3 in Azerbaijan, and in 4 conference proceedings.

Based on the results of the dissertation, recommendations are being applied at the maternity care facility – Astoria Medical Center LLC.

Name of the organization where the dissertation work is performed: The Azerbaijan State Advanced Training Institute named after A. Aliyev

Volume and structure of the dissertation. The dissertation consists of an Introduction -8596 symbols), literature review (Chapter I – 54361 symbols), research materials and methods (Chapter II – 15248 symbols), 4 chapters (Chapter III– 31905 symbols, Chapter IV– 39665 symbols, Chapter V– 31406 symbols, Chapter VI – 31632 symbols) reflecting the results of personal observations – 3089 symbols), practical recommendations and a list of references (– 1216 symbols). The list of references includes literature 166 in English, 3 in Russian, 7 in Azerbaijan languages. The total volume of the dissertation by symbols is 217118 (excluding spaces, tables, graphs, and bibliographies) symbols, enriched with 22 tables and 15 graphs.

MATERIALS AND METHODS OF THE STUDY

Initial materials for studying of "Dependence of abdominal births on the frequency dynamics and type of maternity facilities" have been taken from the following official sources:

- Annual Journals of the Azerbaijan State Statistical Committee (Health care, social security and housing conditions in Azerbaijan): 1×2. Table #24 "operative intervention during childbirth".
- Annual reports of big maternity hospitals in Azerbaijan (form #32 "Report on medical care, abortions and contraception for pregnant and postpartum women"; Table 2/12., total number of pregnancy, births by caesarean section).

As the risk factors affecting the frequency of abdominal births (woman's age, parity) are not similar in all maternity hospitals, standardization was applied to neutralize their impact and assess the correlation of operational activity with subjective factors.

The maternity department of the Republic Clinical Hospital was selected as the basis for studying the complications of abdominal births. The observation was prospective. To determine the minimum level of observation, the frequency of complications recorded during 100 preterm births was calculated. The achieved results showed that, different complication signs have been recorded on 75 women. Taking into consideration the 75% probability of complication intensity and the condition that the allowable error is greater than 45 ($\Delta = 4\%$), the minimum number of observations was ($n = 468$).

The contingent was divided into 6 groups according to the clinical indications of abdominal births and the frequency of complications in each group was calculated (per 100 people):

- Abdominal birth associated with scarring of the uterus (24 cases);
- Abdominal birth due to the abnormal condition of the fetus (180 cases);
- Abdominal birth due to disproportion of pelvic dimensions (160 cases);
- Abdominal birth due to somatic diseases contraindicated in labour pains (120 cases);
- Abdominal birth due to fetal distress and suspicion of it (58 cases);
- Abdominal birth due to other reasons (241 cases).

Laboratory examinations

General analysis of blood and urine, blood S-reactive protein, fibrinogen, bilirubin, total protein, urea, creatinine was determined.

Bacteriological examination of microflora

The smear was taken from the cervical canal and sent for microbiological analysis, the possibility of pathogenic microflora was checked.

Ultrasound examination

Ultrasound examination was performed to assess the involution of the uterus and the condition of the surgical scar.

Morphological examinations

Macroscopy, morphometry and microscopy were used to assess inflammatory processes in the fetoplacental complex. The condition of the placenta was visually assessed, the number of sections, the presence of his hematoma was determined.

Assessment of blood loss (gravimetry)

The surgery materials were collected and weighed. The volume of blood loss was calculated by the Liubov formula (V).

V= B/2 x 30%, where B is the weight of the napkins, 30% is adjustment of the amount of disinfectant solutions and amniotic fluid.

Cardiotocographic examination

A cardiotocographic examination was performed to assess the condition of the fetus.

Assessment of condition of the fetus

The functional condition of the fetus was assessed according to Apgar scale.

DYNAMICS OF THE FREQUENCY OF ABDOMINAL BIRTHS AND DEPENDENCE ON THE TYPE OF MATERNITY HOSPITALS

Indications for abdominal births in the Republic of Azerbaijan are attracted at the corresponding clinical protocol and is used as the main document in all maternity hospitals in the country. According to the information of the State Statistical Committee the frequency of abdominal births in the Republic of Azerbaijan (for all births) was

5.3% in 2005 year, 13.8% in 2010 year, and was respectively 14.8; 17.8; 16.9; 18.1 and 27.9% in 2011, 2012, 2013, 2014 and 2015 years.

The contingent of the maternity hospitals depends on type and material-technical, personnel. According to the existing rules, in the first stage of three-stage obstetrics-gynecological care in most cases, delivery is provided to a contingent with a probability of a normal birth. The frequency of abdominal births in institutions that do not have perinatal centers and are considered as the first-stage obstetric facilities in 2012 year changed within the interval of 5,1±0,55% (Shamakhi) and 23,4±0,76 (Tovuz) and statistically different from each other($P<0,01$).

Frequency of abdominal births in all regions except Goygol in 2013 year was statistically different from 2012 year ($P<0,05$). The frequency of the abdominal births during 2014 year in Masalli (from 11,0±0,56% to 8,0±0,50%), Goygol (from 18,2±1,35% to 3,4±0,63%) was less ($P<0,01$), but was statistically more in Ujar (from 12,4±0,97% to 26,0±1,24%), in Tovuz (from 33,3±1,18% to 57,2±1,33%) and in Shamakhi (from 7,0±0,61% to 9,2±0,67%) than during 2013 year, but in Beylagan it was stable (15,9±1,05 and 14,6±1,0%; $P>0,05$). The number of regions where the frequency of abdominal births in 2014 year was relatively little (≤9%) increased (Masalli, Shamakhi, Goygol), Ujar, Berde, Zagatala and Tovuz are regions where this indicator was high (≥19%) – (table 1).

Table 1.

Dynamics of the frequency of abdominal births in regional facilities for stage I birth assistance (%)

Years / Regions	2012	2013	2014
Masalli	13,4±0,62	11,0±0,56	8,0±0,50
Ujar	16,7±1,09	12,4±0,97	25,0±1,24
Goygol	19,8±1,37	18,2±1,35	3,4±0,63
Beylagan	8,8±0,80	15,9±1,05	14,6±1,0
Berde	26,5±0,92	29,5±0,86	38,6±0,98
Tovuz	23,3±0,76	33,3±1,18	57,2±1,33
Shamakhi	5,1±0,55	7,0±0,61	9,2±0,67
Zagatala	25,4±1,11	27,0±1,10	25,4±0,98

In I stage maternity hospitals both the frequency of abdominal births and their rating according to the specific gravity of abdominal birth indications differ from each-other. The difference was observed in 2014 year, as in 2012 year. The difference in regional I stage maternity hospitals is higher due to the frequency of abdominal births, the specific gravity of indications for abdominal birth does not differ statistically, their sequence (rating) mainly is different.

The frequency of abdominal births in Lenkaran prenatal center during 2012 year was higher than in other prenatal centers (21,4±0,68%). In 2013 and 2014 years the frequency of abdominal births had a tendency to increase (23.4 ± 0.69 and 24.4 ± 0.67%, respectively). Indicators of these years differ from each other statistically correctly (P<0,05). It is clear that the amendment to the legislation on abdominal births did not restrict the application of this operation.

The frequency of abdominal births during 2012 and 2013 years in Shirvan prenatal center did not differ from each other (20.5 ± 1.09 and 20.7 ± 1.08%, respectively; P> 0.05), but in 2014 year statistically increased (35,7±1,29%) and the growth rate is very high (>150%).

The frequency of abdominal births during 2012, 2013 and 2014 years in Ganja prenatal center practically has been at the same level (respectively: 19,5±0,79; 19,7±0,70 & 19,6±0,69%) [29]. The frequency of abdominal births during 2012 year in Sheki prenatal center was relatively low compared to other perinatal centers (16,4±0,74%), but in 2013 year statistically correctly (P<0,01) increased (22,3±0,82%) and approached the appropriate level of Lenkaran perinatal center (23.4 ± 0.69%). Unlike the Lenkaran prenatal center the frequency of abdominal births in Sheki prenatal center during 2014 year didn't increased and sharply decreased and became lower than the level of 2012 year (14,8±0,71%).

The frequency of abdominal births in Guba prenatal center during 2012-2014 years significantly changed chaotically, the level of the indicator in 2012 was 20.8 ± 0.81%, In 2013, it decreased more than 2 times (9.3 ± 0.55%), and in 2014 it increased for 3 times and reached 28.1 ± 0.84%.

The share of scars after caesarean section or other uterine surgery in anamnesis as reasons of abdominal births changed between

20,0±2,8% (Lenkaran prenatal center; 2011 year) 32,0± 3,3% (Ganja prenatal center, 2014 year) and statistically correctly differed from each –other (P<0,01).

The specific weight of this indicator for 2012-2014 years did not differ statistically. Therefore, it can be considered that the presence of scars on the uterus is the most important indication indication for abdominal births in regional perinatal centers and its role is relatively stable.

The specific weight of improper placement of the fetus among indication for abdominal births was relatively low in Ganja (14,0±2,5% in 2012 year, 16,0±2,6% in 2014 year, P>0,05) and Guba (respectively 14,0±2,5 and 16,0±2,6%), and relatively high in Shirvan (respectively 20,0±2,8 and 18,0±2,7%) and in Sheki (respectively 18,0±2,7 and 20,0±2,8%), but the difference was not statistically correct (P>0,05).

The role somatic diseases contraindicated in labor pains as the reasons of abdominal births in 2012 year was relatively low in Shirvan (4,0±1,4% of all abdominal births) and was relatively high in Sheki (10,0±2,1; P<0,05) and Guba (12,0±2,3%; P<0,05). The specific gravity of abdominal births associated with this indication in Sheki and Guba was higher only in comparison with Shirvan, the zero hypothesis is not confirmed in comparison with other perinatal centers.

The share of somatic diseases, which are contraindications for labor pains, among the causes of abdominal births in all prenatal centers didn't statistically correctly differ from each-other in 2014, in comparison with 2012 year. There was no statistically correct difference among prenatal centers due to this indicator in 2014 year too (relatively low rate - 6.0±1.7% in Ganja and Shirvan, relatively high rate of 10.0 ± 2.1% in Lenkaran; P>0.05).

Fetal distress and suspicion of it has a relatively high proportion among indications for abdominal births in all prenatal centers and had changed in a wide range (between 6,0±1,7% and 14,0±2,5%).

12,0±2,3% of abdominal births in 2012 year was conducted because of fetal distress and suspicion of it in Lenkaran and Sheki prenatal centers, 6,0±1,7% - in Ganja prenatal center, 8,0±1,9% - in Shirvan prenatal center, 10,0±2,1% - in Guba prenatal center. Lenkaran and Sheki prenatal centers statistically correctly differed only from Shirvan prenatal center due to these indicators (P<0,05).

Fetal distress and suspicion of it in 2014 year caused abdominal births in 14,0±2,5% of cases in Lenkaran and Guba prenatal centers, in 8,0±1,9% of cases in Ganja and Sheki prenatal centers (P>0,05).

Thus, although the frequency of abdominal births in regional perinatal centers varies over a wide range (9.3±0.55% - 35.7±1.29%) and although its dynamics over calendar years are statistically accurate and diverse, their distribution according to instructions is remarkable for their relative stability. In most cases, the first place among the medical indications for abdominal births is occupied by scars on the uterus, the last 5th place is occupied by somatic diseases that are contraindicated in labor pains. Differences observed in the structure of the frequency and reasons of abdominal births indicate that the status and contingent of regional perinatal centers are different. This can be an important condition for assessment and organization of their activities.

Maternity care in Sumgayit and Mingechevir cities covers the care on both Phases I and II (table 2).

Table 2.

Frequency of abdominal births in the cities of Sumgait and Mingachevir (% of all births)

Indications	Sumgayit, years			Mingachevir, years		
	2012	2013	2014	2012	2013	2014
All the reasons including	25,5± 0,55	24,0± 0,50	23,3± 0,47	27,5± 1,21	27,8± 1,20	32,3±1, 20
History of cesarean section or other uterine surgery	6,1± 0,3	6,0± 0,3	6,1± 0,7	6,3± 0,7	6,4± 0,7	6,6± 0,6
Abnormal condition of the fetus	5,6± 0,3	5,0± 0,3	4,7± 0,3	5,2± 0,6	5,4± 0,6	5,6± 0,6
Fetal - pelvic size disproportion	5,4± 0,3	5,3± 0,3	5,4± 0,3	5,6± 0,6	5,8± 0,6	6,0± 0,6
Somatic diseases that are contraindications to labor pains	2,6± 0,2	2,3± 0,2	2,4± 0,2	2,5± 0,4	2,4± 0,4	2,3± 0,4
Fetal distress and suspicion	2,2± 0,2	2,1± 0,2	2,1± 0,2	2,1± 0,4	2,2± 0,4	3,1± 0,4
Other reasons	3,6± 0,2	3,3± 0,2	2,6± 0,2	5,8± 0,6	5,6± 0,6	8,7± 0,7

In 2012-2014 years, the frequency of abdominal births in Sumgayit had a tendency of decreasing (from 25.5±0.55% till 23.3±0.47%), decreasing is statistically correct (P<0,01). Unlike in Sumgayit, in Mingechevir the frequency of abdominal births tends to increase, growth was modest in 2013, but in 2014 was statistically significant (from 27.5±1.21% till 32.3±1.20%, P<0,01).

In maternity hospitals of both of cities the first place among indications for abdominal chilbirth was occupied by a scar as a result of a caesarean section or other operation on the uterus. The specific gravity of abdominal births for this reason in 2012 – 2014 years remained stable (6.1±0.3 – 6.0±0.3% in Sumgayit and 6.3±0.7 – 6.6±0.6% in Mingechevir) and the difference between cities is not statistically accurate (P>0.05).

There are maternity hospitals in the regions located close to each other, however, there are districts with the first and second stages of maternity care (Lenkaran and Masalli; Sheki and Zagatala; Ganja and Goygol). There is a difference in the dynamics of the frequency of abdominal births in these regions. Thus, the frequency of abdominal births in Masalli (I stage) is significantly low in comparison with Lenkaran (I – II stages) (13,4±,62 and 21,4±0,68%; less for 1,6 times in 2012; 11,0±0,56 and 23,4±0,69%; less for 2,1 times in 2013; 8,0±0,50 and 24,4±0,67%; less for 3,1 times in 2014). As can be seen, in Lankaran perinatal center, which performs the function of the second stages of maternity care for Masalli region the frequency of abdominal births in 2014 year increased in comparison with Masalli district.

But the above-mentioned regularity is not observed in Sheki and Zagatala regions. In the I stage maternity hospital (Zagatala) the frequency of abdominal births is higher than in I and II stage maternity hospital (25,4±1,11 and 16,4±0,74%; more for 1,6 times in 2012; 27,0±1,1% and 22,3±0,82%; more for 1,2 times in 2013; 25,4±0,98 and 14,8±0,71%; more for 1,7 times in 2014). As we see, in the I stage maternity hospital of Sheki-Zagatala regions the frequency of abdominal births is relatively high.

The frequency of abdominal births in I and II stage maternity hospitals of Ganja and Goygol regions in 2012 (19,5±0,98 &

19,8±1,37%) and 2013 (19,7±0,70 & 18,2±1,35%) bir did not differ from each other (P>0,05), but in 2014 in Goygol (3,4±0,63%) the frequency of abdominal births was lower for 5.8 times than in Ganja.

Thus, in 2012 – 2014 years the I and II stage maternity hospitals the frequency and dynamics of abdominal births are manifested with different characteristics: in Lenkaran region at the I stage abdominal births were relatively less, but in Sheki-Zagatala region – was more. In Ganja region this indicator at I and II stages of maternity care in 2013-2013 years was similar, however, in 2014, abdominal births were mainly in stage II.

In Baku city the frequency rate of abdominal births in maternity hospital #5 was the highest during whole observation period, in 2012 this indicator was 49,0±0,90%, and in subsequent years it decreased slowly, but statistically accurate (44,0±0,81% in 2013, 45,3±0,83% in 2014). The rates of indicator for 2013 and 2014 years did not differ statistically from each other.

The maternity hospital#1, which was on the second place in 2012, due to the frequency of abdominal births (45,0±0,98%), stopped its activities after 2013. to the frequency of abdominal births in the maternity hospital #2 is also high and didn't significantly change in 2012-2014 years (41,0± 0,66; 40,0±0,66 & 40,0±0,66%; P>0,05).

The frequency of abdominal births is also high in Clinical Medical Center and remained relatively stable in 2012-2014 years (37,0±1,08; 36,0±0,83 & 36,4±0,83%; P>0,05).

In three maternity hospitals of Baku city (Maternity hospitals 3 and 4, city hospital №6) the frequency of abdominal births was close to each other and in comparison with above mentioned maternity hospitals the frequency of abdominal births was less for 2 times, in maternity hospital #3 (21,0±1,74; 21, 0±1,02 & 22,0±1,03%) and in city hospital №6 (21,0±2,41 & 22,4±1;12%) the frequency of abdominal births in 2012-2014 years remained stable, but there is a significant increase in the diagnosis of the indicator in maternity hospital #4 (21,5±0,93; 20,0±0,88 & 24,0±0,83%; P<0,05).

In the maternity hospital #3 the frequency of abdominal births was significantly less than in the maternity hospitals #1, 2 and 5 and the Clinical Medical Center, but higher than in maternity hospitals #

4 and 7 and other maternity hospitals and in 2012–2014 years was respectively 29,0±0,72; 30,0±,68 and 28,0±0,62%. In the dynamics of the indicators the decline during 2014 year attracts the attention.

In the city hospital #26, located in Mardakan settlement, the frequency of abdominal births was low, in 2012-2014 years changed between 5.0±0.73% and 6.7±0.78% and characterized by relative stability. In the city hospital #10 the dynamics of the frequency of abdominal births declined. The indicator which was 7,0±1,18% in 2012 year declined for 3 times in 2013 year (2.0±0.67%; $P<0.05$), and for more than 6 times in 2014 year (1.1±0.5%; $P<0,01$).

In the city hospital #7 located in the Mashtaga settlement the frequency of abdominal births in 2012-2014 years had an increasing tendency (respectively 14.0±1.4; 21.0±1.26 & 23.0±1.26%).

The frequency of abdominal births in separate maternal hospitals significantly differed from each other and there is no single direction in the dynamics of the indicator, but the total frequency of abdominal births in Baku city tends to decrease, albeit at a slower pace (31.0±0.27%in 2012 year; 30.0±0.26% in 2013 year and 30.3±0.25% in 2014 year).

CLINICAL CHARACTERISTICS, STRUCTURE OF REASONS OF ABDOMINAL BIRTHS AND THE EFFECT OF OPERATIVE ACTIVITY ON PERINATAL LOSSES AND PATHOLOGIES

Abdominal births are performed according to 5 groups of indications: history of caesarean section or scarring related to other uterine surgery (24.0%); complications in vaginal delivery due to improper placement of the fetus (18.0%); complication of vaginal delivery with disproportion of fetal-pelvic size (16.0%); presence of somatic diseases contraindicated in labor pains (12.05) and fetal distress and suspicion (5.8%). The share of other indications is 24.2%.

In third and subsequent births, caesarean section is often performed due to scarring of the uterus (70 ± 3.0%) and fetal distress (53.4 ± 6.6%). For all reasons, the majority of abdominal births (49.5 ± 1.6%) occur in women with a body mass index of 30 kg/m² and more.

49.3±1.6% of abdominal births were in women of age under 25 years, 53.1±1.6% of them were first-time births, and 46.6 ± 1.6% were women delivering at 40-41 weeks of gestation. 40.1 ± 1.6% of abdominal births last less than 40 minutes, and 59.9 ± 1.6% last more than 40 minutes. Cases with a duration of more than 40 minutes are relatively rare (41.4±6.5%) in fetal distress and suspected abdominal births.

The frequency of abdominal births in obstetric facilities varies over a wide range (5.1 ± 0.55-57.2 ±1.33%) and dynamic monitoring in maternity facilities is necessary to determine the effect of operative activity on prenatal pathologies and losses.

The relationship between the frequency of abdominal births and prenatal mortality is weak (correlation coefficient 0.35). Frequency of abdominal births <15; 15 - 25; 25 - 35.5; at ≥36%, the prenatal mortality rate was 11.68 ± 1.90, respectively; 23.94 ± 3.48; 11.75 ± 3.17 and 13.66 ± 3.87 ‰. The frequency of abdominal births of 15-25% is associated with a relatively high risk of prenatal death.

Direct correlation of the probability of prenatal death with the frequency of abdominal births was observed in Lenkaran Prenatal Center (r=0,75), Sheki Prenatal Center (r=0,869), Guba Prenatal Center (r=0,681), Shamakhi Maternity Department (r=0,938477), in maternity hospitals 5 and 7 of Baku city (r≥0,865), inverse proportionality was observed in Shirvan Prenatal Center (r=–0,998), Ujar Maternity Department(r=–0,6799), in Mingechevir maternity hospital (r=–0,9617), Ganja Prenatal Center (r=–0,6581), in Beylagan Maternity Department (r=–0,51), in Tovuz Maternity Department (r=–0,93447), in maternity hospital 3 (r=–0,99795) and 4 (r=–0,53995) of Baku city.

In general, the inverse correlation between the frequency of abdominal births and perinatal mortality in maternity hospitals in Baku is moderate (r = –0.4051), the role of surgical interventions in reducing of prenatal losses is observed. The frequency of abdominal births in maternity hospitals in Baku is in the range of 20 - 28, 30 - 45%, which is associated with different levels of early neonatal mortality (3.5 ± 0.87 and 5.01 ± 1.82 ‰, respectively) (P>0.05).

Frequency of fetal asphyxia and hypoxia in hospitals with <11; 11 – 21; 21 – 35,7% abdominal births frequency correspondingly was

3,3±2,33; 4,1±1,22 and 7,4±2,71% and did not differ statistically accurately from each other (P>0,05).

Although the effect of abdominal births on the risk of prenatal mortality and prenatal pathologies is more clearly observed in the example of individual maternity centers, it cannot be assessed unambiguously in general.

FREQUENCY, STRUCTURE AND RISK FACTORS OF COMBINATIONS OF ABDOMINAL BIRTHS

Complications like pain syndrome in 30,8±1,5 cases, high temperature in 25,2±1,4 cases, lactostosis in 19,1±1,2 cases, subinvolution of the uterus in 10,9±1,0 cases, blooding in 2,7±0,5cases, infiltrate in 2,5±0,5 cases, endometritis in 1,7±0,4 cases, metroendometritis in 2,3±0,5 cases and laxiometerin 3,2±0,6 were observed after abdominal births per every 100 surgeries.

The intensity of different types of complications after surgery varies depending on the indications for abdominal births: pain syndrome - from 24,0±2,7% to 41,7±4,5 %, high temperature from 14,9±2,3% to 39,2±4,5%, lactostosis– from 16,7±3,4% to 24,±5,6%, subinvolution of the uterus - from 11,3±3,5% to 15,5±4,8, blooding – from 1,7±1,1% to 5,2±2,9 %, infiltrate from 1,7±0,9% to 3,5± 2,4%, endometritis from1,1±0,7%-to 2,1±0,9%, metroendometritis from 1,7±0,8% to 9,5±2,4%, laxiometerfrom 1,7±1,7% to 4,4±1,5%.

Urgent and planned caesarean sections differ statistically in terms of the structure of indications for abdominal delivery. The incidence of uterine scarring is 2.58 times and fetal distress is 6 times higher. The likelihood of complications after abdominal births varies depending on the patient's health status (extragenital, genital diseases), obstetric history and the course of the current pregnancy. Anemia is observed in 59.8±1.6%, thyroid disease in 12.2±1.0%, arterial hypertension in 18.2±1.2%, chronic in 12.2±1.0% bronchitis, diseases of the upper respiratory tract in 61.4±1.5%, gallstone disease and chronic cholecystitis in 19.2±1.2%, chronic pyelonephritis in 18.4±1.2%, inflammatory diseases of the small pelvic organs in 29.9 ±1.5%, endocervicitis and other diseases in 19.6±1.2% of women after

abdominal delivery, what shows the presence of polypathy (multimorbidity) in patients (diagram).

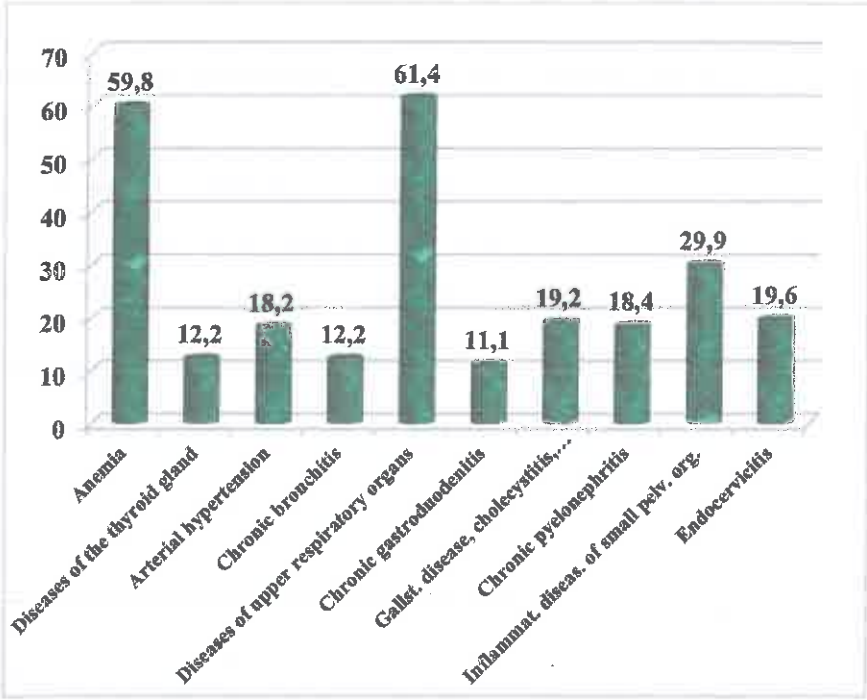

Diagram. Complications of abdominal births depending on extragenital and genital pathologies

The obstetrics anamnesis of abdominally delivered women shows risk of premature rupture in previous pregnancies in 30,2± 1,5% cases, artificial abortions in 24,4±1,4% cases, operative delivery in 24,0±1,4% cases, postpartum infections in 25,8±1,4% cases, preeclampsia in 18,4±1,2% cases, spontaneous abortions in 11,2±1,0% cases, postpartum hemorrhage in 8,2±0,9% cases, aggravation of previous births in 16,4±1,7 % cases.

A woman's health status, obstetric history, clinical and laboratory indicators are a reliable predictor of postoperative complications, and their prognostic value varies in the range of 60.7-89.6% before abdominal delivery.

DISCUSSION OF ACHIEVED RESULTS AND JUSTIFICATION OF OPPORTUNITIES FOR OPTIMIZATION OF ABDOMINAL BIRTHS

The World Health Organization conducting international monitoring of abdominal births shows in its reports that during 2007-2014 years in China, Azerbaijan, Belarus number of abdominal births increased for 1.2 times. On the background of increasing of frequency of abdominal births the difference between countries is saved. Thus, the frequency of abdominal births in Azerbaijan in 2006 year was 7.45%, in 2011 year this figure increased for more than 2 times and became 19.3%.

One of the peculiarities of the Republic of Azerbaijan is that the network of obstetric and gynecological care is divided into stages (I, II and III) which can be integrated between each-other. In turn this feature creates conditions for the concentration of abdominal births in certain centers. Due to this factor, different levels of abdominal births have been observed by Chinese scientists. Abdominal births are mainly performed in type II and III (level) maternity hospitals. Therefore, the frequency of abdominal births in such institutions reaches 52% and 56%.

Comparison of frequencies of abdominal births in maternal institutions of I and II stages shows the following results:

- Interval of change in the frequency of abdominal births in Phase I maternity institutions (3,4±0,63% - 57,2±1,33%) is higher than Phase II maternity institutions (9,3±0,55% - 35,7 ±1,29%);
- In 2012-2014 years (before and after the adoption of legislation on abdominal births) increasing of the frequency of abdominal births was more intensive in Phase I maternity institutions (In Tovuz 2 times, and in Shirvan 1.8 times more);
- Decreasing of abdominal births is more intensive in some Phase I maternity institutions (6 times in Goygol, 1.1 times in Sheki).

The frequency of abdominal births in Baku, Sumgayit and Mingechevir maternity hospitals for the Phase I and II increased by 1.1±0.50% (Baku, city hospital No. 10, 2014) 49.0±0.90% (Baku, Maternity hospital No. 5).

The age influence on the probability of abdominal births changes depending on parity (number of births). According to the collected information (Chapter IV) the distribution of women in abdominal and vaginal births differs according to the parried.

According to our data (Chapter IV), the distribution of women according to parietal differs in abdominal and vaginal births. (specific gravity of 1st births respectively is 53.1 ± 1.6 and 48.4 ± 1.6% (relative risk is 1.09) and the specific gravity of subsequent births is 24,6±1,4 and 30,6±1,5%; (relative risk is 0,80).

The specific gravity of the first, the third and last births varies depending on the indications for caesarean section in abdominally delivering women:

- due to scarring on the uterus : 0 & 70±3,0%;
- due to improper placement of the fetus:88,9±2,3 & 0%;
- due to the disproportion of fetal-pelvic dimensions:75,0±3,4 & 3,1± 1,4%;
- due to somatic diseases that are contraindicated in labor pains 40±4,5 & 10±2,7% ;
- associated with fetal distress and suspicion of it 37,9±6,4 & 53,4±6,6%;
- due to other reasons 74,8±2,8 & 12,4±2,1 %;
- due to all reasons 53,1±1,6 & 24,6±1,4% .

Increasing of the frequency of abdominal births makes the possibility of reducing perinatal losses is questionable. Besides it, another fact which should be noticed is that complications in abdominal births are significantly more.

The inevitability of complications in abdominal labor raises two important issues:

- to organize prevention of risk factors for complications by identifying them;
- to form a decision on vaginal birth by informing women of possible complications when there are subjective indications for abdominal birth (woman's insistence).

Some of the risk factors that increase the complications of abdominal births have been identified in our study, and their prognostic significance has been substantiated. These factors are:

- indications for abdominal birth;
- urgent surgery implementation;
- surgery duration more than 40 minutes;
- blood loss more than 500 ml during the surgery;
- extragenital diseases of woman (anemia, thyroid disease, arterial hypertension, chronic respiratory diseases, chronic pyelonephritis);
- chronic gynecological diseases in woman (inflammatory diseases of the small pelvic organs, endocervicitis, ovarian cysts, fibroids and endometriosis, endometrial polyps);
- obstetric anamnesis (risk of miscarriage in previous pregnancies, abortions, operative childbirth, infections, preeclampsia, spontaneous abortions, postpartum hemorrhage, premature births);
- complications of current pregnancy (risk of premature miscarriage, preeclampsia, intrauterine infection, fetoplacental insufficiency);
- clinical and laboratory characteristics of health status (haemoglobin <100 g / l; haematocrit <35%; platelets <200 · 109 l; erythrocyte sedimentation rate ≥10 mm / h; fibrinogen ≥2q / l; total protein ≤70 g / l; bilirubin ≥10 μmol / l; urea ≥4 mmol / l; creatinine ≥60mkmol / l; S reactive protein ≥4 mg / l; the presence of germs in the uterine lining).

Taking into consideration the results of our study, used literature and legal and normative rules, we can say that the following medical and prophylactic measures are necessary:

- Sanitary education of young women about the importance of natural childbirth for mother and child, the need for caesarean section only when medically indicated;
- planning of abdominal births on the basis of medical instructions without interfering with women's rights and freedoms;
- to plan urgent abdominal births in advance on the basis of medical instructions, to provide prevention of possible complications taking into account their risk factors.

RESULTS

1. The frequency of abdominal births fluctuates widely depending on the stages of the delivery system (between 1,1±0,50 %-57,2±1,33%), in 2012-2014 years changes in three directions (increasing, stability and decreasing), the structure of their clinical indications is not stable, it depends on the type, potential and dislocation of obstetric facilities, the age of the pregnant woman, parity, duration of gestation, body mass index. [1;4]
2. The specific weight of the 2nd (single pregnancy ≥37 weeks, onset, first birth induced or planned caesarean section), 4th (single pregnancy ≥37 weeks, onset, recurrence, absence of scarring in the uterus, spontaneous birth) and 1st (single pregnancy ≥37 weeks, onset, recurrence, miscarriage) groups of the Robson classification is high among the Azerbaijani population (respectively 20.9 ± 0.55; 19.1 ± 0.53; 18.8 ± 0.53 and 18.1 ± 0.52%,), but the frequency of abdominal births is relatively low (≤1,8%): In 9th (transverse and oblique placement of the fetus, single pregnancy with or without scar in the uterus), 8th (multiple variant multiple pregnancy), 7th (single pregnancy, recurrent pelvic birth and uterine scar) and 6th (single pregnancy, first birth, pelvic arrival) groups the need for caesarean section reaches 86.2 ± 3.7 - 100%. [6].
3. The correlation between the frequency of abdominal births and perinatal mortality in maternity hospitals is weak (r=0,35), perinatal mortality rates are close to each other (11,68±1,90; 11,75±3,17 & 13,06±3,87‰)in maternity hospitals where the application rate of abdominal births is <15; 25-35,5; ≥36%, the risk of perinatal death is high(23,94±3,48‰) as the indicators are within the interval 15-25%.

   During 2012-2014 years in the same maternity institutions an inverse correlation between frequency of abdominal births and prenatal death rate was found in Maternity hospitals # 3 and 4 of Baku city, in maternity institutions of Shirvan, Ujar, Mingechevir, Ganja, Beylagan, Tovuz (2≥0,51 – 0,99795), and a direct correlation was found in maternity institutions of

Lenkaran, Sheki, Guba and Shamakhi districts (2≥0,68). In maternity hospitals of Baku city where the abdominal births are 20-28, 30-45% the probability of early neonatal death is different (correspondingly 3,5±0,87 & 5,01±1,82‰).[2;3]

4. Late complications after abdominal births (pain syndrome, fever, lactostasis, uterine subinvolution, bleeding, infiltrate, endometrial, metroendometric, lactometer, etc.) is very common (One in 80% of cases, two in 10% of cases, three and more in 2% of cases), and the risk factors are associated with urgent implementation of surgery, duration of surgery more than 40 minutes, blood loss more than 500 ml, features of clinical indications, extragenital and genital diseases of the patient, obstetric anamnesis, pregnancy. [5;8]
5. Prognostic significance of risk factors for complications of abdominal births as a predictor varies in the range of 63.4-89.1%, specificity in the range of 40.5-94.5%, refers to factors of high prognostic significance: anemia (88.3%), arterial hypertension (87.9%), in the anamnesis endocervicitis (81.6%), haematocrit <35% (89.1%), fibrinogen ≥4 g/l (88.5%), urea ≥4 μmol / l, creatinine ≥60 μmol/l (85.7%)), S reactive protein ≥4 mg/l (88.2%) have prognostic significance. Variation in the frequency of abdominal births over a wide range (1,1-57,2%), unequivocally negative effect on perinatal losses and pathologies and high risk of postoperative complications and their application should be planned taking into account the psychological readiness of the woman and strict clinical indications. [7]

PRACTICAL RECOMMENDATIONS

1. The priority of a new direction - public education is very important for prevention of sharp increase in the frequency of abdominal births.
2. As urgent abdominal births are associated with a higher risk of complications the cesarean section should be planned taking into account the clinical indications in women's clinics.

3. Because abdominal births are used at all stages of maternity care the personnel and material and technical base of these enterprises should be optimized.
4. Traditional indicators are not satisfactory to assess the level of caesarean section, taking into account the risk factors that increase the likelihood of abdominal births, a standardized abdominal birth rate should be used for adequacy of the assessment.
5. To predict the complication of abdominal births, especially the likelihood of infectious complications it is necessary to use their predictors, especially those with high prognostic value, and to take preventive measures.
6. Monitoring of abdominal births should be strengthened in maternity hospitals where there is an increase in perinatal losses against the background of increasing frequency of abdominal births.

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