Risk Factors for the Development of Obstetric Pathologies in Women with Outflow of Amniotic Fluid

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ABSTRACT

The article presents the results of a gynecological and somatic history. A gynecological history was burdened in 71.7% of the subjects: chronic inflammatory diseases of the appendages, and vagina in 37.7% diseases of the cervix in 25.5%, uterine fibroids in 5.7% and ovarian cysts in 2.8%. Overweight somatic history was 81.1% of pregnant women. The most frequent pathologies among the examined patients were: Iron deficiency anemia in 36.8%, and diseases of the urinary system in 10.4%. Clinical and anamnestic risk factors for pregnant women complicated by premature rupture discharge of amniotic fluid are a history of endometritis, pathological growth of conditionally pathogenic cervicovaginal microflora, chlamydia, nonspecific vaginal inflammation.

Keywords: amniotic membrane, premature rupture of amniotic fluid, induction of labor, chorionamnionitis.

Premature discharge of amniotic fluid in premature pregnancy is considered to be the most important risk factor for the fetus and mother, as it determines the high level of perinatal and infant morbidity and mortality. [1,2] Complication of labor by premature rupture of membranes is one of the most important problems of modern obstetrics. [3,4] Premature rupture of membranes is the cause of initiation of labor in 8-92% of cases, depending on the period of pregnancy. The problem of preterm birth (PB) is the leading one in the structure of perinatal morbidity and mortality. [5,6]

After a premature rupture of the fetal membrane, regular labor activity does not always develop, the anhydrous period in the premature term can be days and months, and this usually leads to complications in childbirth, the postpartum period, and affects the state of the mother and baby [7]. Some authors believe that wait-and-see tactics for premature rupture of the membranes at a premature period are a risk factor for the development of choriodeciduititis and chorioamnionitis [8], and histological examination is the gold standard for diagnosing pathology of the placenta and chorioamnionitis. Sometimes the prenatal rupture of the amniotic fluid disrupts the normal course of labor and can lead to complications such as prolonged latent and active phases of labor, the development of hypoxia and infection of the mother and fetus. [9,10] A great threat to the mother is chorioamnionitis, which worsens the course and outcome of childbirth. The importance of studying this problem lies in the fact that there is no generally accepted tactic of conducting childbirth with an increase in the anhydrous interval. At present, there is no consensus on the effectiveness of the prophylactic administration of antibacterial drugs and the choice of delivery method with an increase in the anhydrous interval. Therefore, the primary

task of medical science and practical health care is the development of management tactics for childbirth with prenatal rupture of the membranes, in order to reduce infectious complications in puerperas periods and newborns. Despite numerous scientific and practical studies in this area, the frequency of preterm birth does not decrease, and in some countries even grows, which necessitates further comprehensive study and improvement of diagnostic and therapeutic measures. In the diagnosis of preterm birth, several biophysical and biochemical markers, an ultrasound assessment of the length of the cervix, are used. [11]

Amniotic fluid is a biologically active environment surrounding the fetus. Throughout pregnancy, amniotic fluid performs a wide variety of functions, ensuring the normal functioning of the mother-placenta-fetus system.

The initiation of perinatal morbidity in most cases are intrauterine infections, prenatal and premature rupture of membranes, ranging from 24% to 36% of all births. [12] Premature discharge of amniotic fluid is closely associated with perinatal infection, increasing by 10 times the risk of neonatal sepsis, high perinatal and infant mortality, as well as the risk of purulent-septic complications of the mother. Often there was a history of viral infection; isthmic-cervical insufficiency; uterine malformations; uterine hyperextension due to polyhydramnios, multiple pregnancy, fetal macrosomia; surgery during pregnancy, especially on abdominal organs, or trauma. Note also the role in the Genesis of rupture of membranes in the II trimester of pregnancy factors such as race or ethnicity, access to health care. Factors that contribute to premature discharge of amniotic fluid at different stages of pregnancy remain not fully understood. [13,14]

Objective: The study the causal factors, as well as obstetric and perinatal outcomes of labor in women with premature rupture of membranes and tactics of labor.

Material and methods: The material of study was the history of the birth of 106 pregnant women who have births complicated by premature rupture of membranes in the period from 22-36 weeks of gestation, delivery in the Bukhara regional perinatal center for the period 2017-2019 years. To studied somatic anamnesis data, obstetrical and gynecological status of all postpartum women. Collecting anamnesis carefully studied for the present and previous pregnancies, childbirth and the postpartum period. Laboratory parameters, the state of vaginal flora, the degree of readiness of the birth canal on the Bishop scale according to indications (bleeding, congenital malformations of the fetus, antenatal fetal death, signs of chorioamnionitis, inconclusive fetal condition) were also analyzed. Ultrasound examination of the uterus and fetus was also performed.

Results and discussion: The median age was 26.5 year. All women had a history of pregnancy with a combination of obstetric, gynecological and somatic diseases. Among patients with premature rupture of membranes 20.7% (22 women) had low socio-economic status; 11.3% (11 women) bad habits (drug and nicotine addiction), 20.7% (22 women) occupational hazards and 30.2% (32 women) burdened heredity.

In most cases, combinations of several pathologies were revealed. Table 1 shows the obstetric history.

Table 1
Obstetrics history of examined women (n = 106)

Parity assessment			**Total in groups**	**Total**
Nulliparous	Pregnant	26(60,5%)	43 (40,6%)	106 (100%)
	History of abortion	6 (14%)		
	Spontaneous miscarriage	11(25,6%)		

Multiparous	Multiparous	20 (31,7%)	63 (59,4%)	
	Childbirth + artifitial abortion	18(28,6%)		
	Childbirth + Spontaneous miscarriage	25(39,7%)		

The table shows that the parity prevailed repeated births (63 women), which amounted to 59.4%. Almost every third woman who gave birth (28.6%) had a history of artificial abortion. Reproductive losses such as non-developing pregnancy and spontaneous miscarriages occurred in both groups. Pregnancy ended prematurely in 81 women, which was 76.4%. In 25 women, pregnancy was prolonged to full term (23.6%).

The study of gynecological history of the examined showed that more than half of 76 (71.7%) pregnant women had a complicated history. 27 women (25.5%) reported genital diseases: mainly cervicitis - in 26 (24.5%), chronic inflammatory diseases of the appendages and vagina - in 40 (37.7%). Sexually transmitted infections (chlamydia, herpes, ureaplasma) were diagnosed in 8 (7.5%). Retention ovarian formations (cysts) were diagnosed in 3 women (2.8%). Cervical diathermocoagulation for erosions was performed in 13.2% of cases (14 women). Various surgical interventions in the genital organs in the anamnesis were in 11 women, which was 10.4% of cases. Below are the data of the somatic status of the examined women.

(Table 2)

Somatic status of examined women (n = 106)

Nosology of diseases	**abs**	**(%)**	**Total**
Anemia	82	77,4	106 (100%)
Thyroid Diseases	44	41,5	
Gastrointestinal tract diseases (gastritis, pancreatitis)	7	6,6	
Diseases of the cardiovascular system (hypertension, hypotension, varicose veins)	13	12,3	
Urinary system diseases (pyelonephritis, urolithiasis, cystitis)	31	29,2	
ENT diseases of the organs (tonsillitis, sinusitis)	61	57,5	
Infectious diseases transferred during a real pregnancy (ARI, exacerbation of sinusitis)	28	26,4	
Broncho-pulmonary diseases (bronchitis, bronchial asthma)	3	2,8	
Myopia	17	16	
Other	11	10,4	

All pregnant women with premature discharge of amniotic fluid had a history of somatic impairment. The structure of extragenital diseases was dominated by anemia, diseases of the thyroid gland and urinary system, as well as diseases of the ENT organs and gastrointestinal tract

The results of the vaginal microbiocenosis and detection of the presence of pathogens were assessed by analyzing

vaginal secretions on the flora. Smear sampling is made from the mucous membrane of the vagina, cervix or urethra.

The second degree of purity had 31 women (29.2 per cent), in which the contents of the vagina had acid reaction (pH=5-5,5) with vaginal cells and sticks Dederleyna to a lesser extent, a lot of bacteria type commatariabill (anaerobic curved in the form of a comma coli), many epithelial cells, there were some white blood cells

The third degree of purity was found in 58 women (54,7%), in which vaginal secretions were weakly alkaline reaction (pH 6,0-6,5), vaginal sticks were in small numbers, dominated commatariabill and anaerobic Streptococcus, there were many cocci with the presence of a large number of leukocytes.

17 women (16%) were diagnosed with grade 4 vaginal smear purity, which had a weakly alkaline reaction, with no vaginal rods. Commatariabill were in the minority, motley dominated the bacterial flora, anaerobic cocci, bacilli, there were few Trichomonas or other specific infectious agents, the mass of leukocytes.

According to the National standard management of patients with premature discharge of amniotic fluid to all expectant mothers initiated antibiotic therapy (pill erythromycin at 500 mg every 8 hours) with the purpose of prophylaxis of purulent-septic complications in the fetus. In order to prevent respiratory distress syndrome appointed: intramuscular injection of dexamethasone 8 mg every 8 hours within 3 days. 10 mg drug Nifedipine uses as tocolytic therapy to threat of premature birth, with every 15 minutes to five tablets.

At the gestation period from 28 to 34 weeks, the priority was considered to be a waiting-active tactic, the purpose of which was: to prevent the development of clinically and histologically significant chorioamnionitis. In 28 (26.4%) of mothers in the dynamics of expectant management withheld in connection with the accession of signs of chorioamnionitis or strict contraindications to prolongation of pregnancy (bleeding, malformations of the fetus, antenatal death of the fetus, the inconclusive status of the fetus), what was the indication for the beginning of labor induction.

The following signs were considered parameters increase the risk of chorioamnionitis: an increase in leukocytes more than 15-20% of the original level, neutrophils and especially C-reactive protein, the presence of negative dynamics of the functional state of the system mother—placenta—fetus (reduction of amniotic fluid index, a decrease in cranial index, the negative dynamics when Doppler in middle brain artery of the fetus). Before labor induction conducted a study to assess the maturity of the cervix on a scale of Bishop.

It was revealed that 40.6% of the examined pregnant women had the parameters of disclosure, length, consistency, position of the cervix and the state of the preposterous part of the fetus with scores up to 5, which was assessed as "immature cervix" of uterine. And in 61.3% of women, the birth canal was assessed as "mature cervix" of uterine. Accordingly, the tactics of further management was chosen according to the Protocol of the Regional Perinatal Center. In pregnant women with" immature " cervix in combination with obstetric complications, according to the protocol, induction of labor with drug Glandine E2, 3 mg per 1 drug per vaginal after informed consent of the pregnant woman and relatives was proposed. A conversation was held about possible complications of labor excitation. Fetal heartbeat and uterine activity were monitored during induction. The birth canal was reassessed after 8 hours to clarify the need for continued induction. Pregnant women with "mature" cervix, the delivery was conducted in a wait and see tactic to cast regular labor or a Council of physicians decided on labor induction oxytocin. 67.8% of pregnant women delivered through the natural birth canal. The tactics of pregnancy management and the choice of delivery method were discussed in each case collectively by a Council of doctors. With the beginning of the regular labor activity, the antibiotic is replaced in the injectable form. Given the high sensitivity of vaginal and

cervical bacteria to ampicillin, we prefer to use this antibacterial drug in women with premature discharge of amniotic fluid.

The nature of labor activity was controlled on the basis of partograms. In the management of labor complicated by premature discharge of amniotic fluid maintained control of hemodynamic parameters, to the body every 4 hours, a blood leukocytosis, 1 per day, general blood analysis (coagulation, C-reactive protein, leukocyte intoxication index, urinalysis, blood group and Rh affiliation, analysis of vaginal discharge (smear), ultrasound of the uterus and fetus, the overall status of mothers.

In case of critical conditions threatening the lives of women (severe preeclampsia, eclampsia, failure of the scar after the cesarean section), severe obstetric pathology, with the immaturity of the cervix with the accession of chorioamnionitis, absence of conditions for urgent delivery the doctors decided the question of surgical births.

Summary.

1. Thus, in the process of retrospective study of birth histories, it was found that the main factors contributing to premature discharge of amniotic fluid are burdened obstetric, gynecological and somatic history, which occurred in all cases of the study. The most common background pathology was anemia, diseases of the urinary system and infections suffered during this pregnancy.

2. Premature outpouring of amniotic fluid as a consequence of pathological growth of conditionally pathogenic cervico-vaginal microflora in 26.4% of cases was the cause of chorioamnionitis, which contributed to a significant increase in the specific frequency of obstetric pathologies.

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