

# Diagnostic Methods of Discharge of Amniotic Fluid and Urogenital Infections

Gulchekhra Ikhtiyarova Akmalovna<sup>1</sup>, Abror Bozorov Gaybullaevich<sup>1</sup>, Iroda Tosheva Isroilovna<sup>1\*</sup>

<sup>1</sup>Department of the Obstetrics and Gynecology, Bukhara State Medical Institute, Bukhara, Uzbekistan

**\*Corresponding Author:** Iroda Tosheva Isroilovna, Department of the Obstetrics and Gynecology, Bukhara State Medical Institute, Bukhara, Uzbekistan

**Received:** 20 September 2023; **Accepted:** 01 March 2024; **Published:** 12 March 2024

**Citation:** Gulchekhra Ikhtiyarova Akmalovna, Abror Bozorov Gaybullaevich, Iroda Tosheva Isroilovna, (2024). Diagnostic Methods of Discharge of Amniotic Fluid and Urogenital Infections. International Journal of Reproductive Research. 3(1). DOI: 10.58489/2836-2225/016

**Copyright:** © 2024 Iroda Tosheva Isroilovna, this is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

## Abstract

The problem of infectious diseases in the antenatal development of the fetus with the discharge of amniotic fluid is one of the most urgent problems in obstetrics. Infection of the fetus in the womb during prenatal rupture of amniotic fluid can lead to complications during pregnancy, childbirth, or the development of diseases in the postpartum period.

**Keywords:** premature rupture of amniotic fluid, antenatal fetal death, post-delivery

## Introduction

Untimely rupture of amniotic fluid during premature and full-term pregnancy is considered the most important risk factor for the fetus and mother. Intrauterine infection of the fetus at the present stage is one of the most important problems of obstetrics and perinatology [1]. The role of chlamydial, cytomegalovirus, ureaplasma infections during pregnancy has sharply increased. Recently, in all countries there has been an increase in infectious pathology, which, on the one hand, is associated with the emergence of new, more informative diagnostic methods and, accordingly, with an increase in lifetime infections, on the other hand, a true increase in the frequency of this pathology is not excluded [2,3]. Infection of the fetus in the womb during prenatal rupture of amniotic fluid can lead to complications during pregnancy, childbirth, or the development of the disease in the newborn [4,5].

Stillbirth in preterm birth is observed 8-13 times more often than in full-term pregnancy, and premature live births account for up to 75% of early neonatal and infant mortality. This is primarily due to the variety of medical and biological factors, including intrauterine infection, endocrinopathies, and other psychological and socio-economic aspects in women's lives. At the same time, the etiology of preterm birth in 17-58% cannot be established [6,7].

The initiation of antenatal fetal death in most cases

are intrauterine infections, prenatal and premature rupture of the membranes (PROM, PPROM), accounting for 24% to 36% of all births [8]. PROM 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 matter.

The tactics of managing pregnant women with this pathology is extremely variable, and depends on the gestational age, on the amount of amniotic fluid, on the severity of the infectious process, on the severity of the infectious process, on the presence of extragenital pathology and complications of this pregnancy. Therefore, approaches to the management of antenatal fetal death complicated by PROM may differ not only in different countries, but also within the same city. In the countries of Western Europe, America, Japan, and recently in our country, the tactics of labor induction complicated by PROM are used [9,10].

When choosing the tactics of labor management in antenatal fetal death (AFD) of preterm pregnancy with premature rupture of amniotic fluid (PPROM) or with prenatal rupture of amniotic fluid (PROM), it is necessary to constantly compare the risks of using expectant or active tactics, maternal risks - premature detachment of a normally located placenta, chorioamnionitis, sepsis, postpartum uterine hypotension, fever and endometritis in the puerperal

period, with the risks of choosing active-expectant tactics (pre-induction, induction of labor) or active tactics on the uterus (caesarean section - CS) [11,12]. Contraindications for the choice of expectant tactics - chorioamnionitis; complications of pregnancy requiring urgent delivery (severe preeclampsia, eclampsia, placental abruption, bleeding with placenta previa); decompensated states of the mother; Active tactics are also characterized by possible risks of complications: the need for labor induction, which can be complicated by uterine hyperstimulation, an increase in the frequency of CS, pain, discomfort; development of maternal septic complications. However, the advantage of active tactics is the prevention of infection. It should be taken into account that the frequency of infection and CS increase in the case of labor induction after a 72-hour anhydrous period [11,12].

### Purpose

To study obstetric outcomes in women with antenatal fetal death due to antenatal and premature rupture of membranes and management of labor.

### Material and Research Methods

To solve the tasks set, a comprehensive examination of 52 pregnant women was carried out, the births of which were complicated with DIOV at 37-40 weeks of gestation, who were admitted to the Bukhara Regional Perinatal Center for the period of 2017. With the help of anamnestic, clinical, laboratory and instrumental data, we studied the course of pregnancy, childbirth, and the postpartum period. The readiness of the birth canal was assessed according to the Bishop scale. According to the National Standard for the Management of Patients with DIOV, after 18 hours of an anhydrous period, which is the basis for antibiotic therapy, in order to prevent purulent-septic complications in puerperas and the birth canal of pregnant women, they were examined after 24 hours in the absence of labor activity in order to resolve the issue of the advisability of labor induction. The nature of labor activity was controlled on the basis of partograms. When managing childbirth complicated by prenatal rupture of amniotic fluid, it is necessary to control hemodynamic parameters, maintain an observation sheet, measure to-body every 4 hours, blood for leukocytosis 1 time per day, complete blood count (coagulogram, C-reactive protein, leukocyte intoxication index, urinalysis, blood type and Rh- affiliation, analysis of vaginal discharge - smear, ultrasound of the uterus and fetus, cervicometry, general condition of the woman in labor. Given the high sensitivity of the

bacteria of the vagina and cervix to ampicillin, the use of this antibacterial drug during childbirth immediately with premature rupture of amniotic fluid is indicated. water.

### Results and Discussion

The average age of the observed women was 26.5 years. In all women, pregnancy proceeded against the background of extragenital diseases, and in most cases a combination of several of them. Anemia of mild and moderate severity (73.1%), thyroid diseases (32.7%) and varicose veins (25%) prevailed. Every third woman (32.7%) suffered infectious diseases during this pregnancy, mainly in the form of acute respiratory infections (ARI), exacerbation of chronic sinusitis, cystitis, pyelonephritis. In 17.3% of pregnant women, ARI episodes were repeated many times during pregnancy. Among the transferred gynecological diseases, chronic endometritis, viral infections of herpetic and ureaplasmosis in combination with chlamydia 54% and colpitis of various etiologies, vaginal dysbiosis, which amounted to 44.6%, were most often diagnosed. In all women with prenatal rupture of amniotic fluid, a vaginal examination was performed using mirrors to identify the nature of the discharge, the color of the amniotic fluid, and the degree of cervical dilatation. It was revealed that at the onset of labor in 61.6% of the examined pregnant women, the parameters of disclosure, length, consistency, position of the cervix and the condition of the presenting part of the fetus had points up to 5, which was assessed as "immature cervix".

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 (Table 1).

As can be seen from the table, the assessment was carried out according to 5 criteria. And in 38.4% of women, the birth canal was assessed as a "mature cervix". Accordingly, the tactics of further management was chosen according to the protocol of the maternity complex. In pregnant women with an "immature" cervix and signs of colpitis, it was proposed to induce labor with mifepristone 200 mg, 1 tablet after the informed consent of the pregnant

woman and relatives. The birth canal was re-evaluated at 12 hours to clarify the need for continued induction. In pregnant women with a “mature” cervix, labor was carried out by expectant tactics: Convince the woman that it is possible for a spontaneous birth of the fetus to occur within 24-48 hours without complications. With the consent of the family, the woman is under the supervision of a gynecologist, waiting for the spontaneous onset of labor (up to 24 hours), they analyze the coagulogram and the

number of platelets, the level of progesterone and estriol. If within 24-48 hours the platelet count has decreased or spontaneous delivery has not occurred, active management in favor of prostaglandins should be discussed. In critical conditions that threaten the life of a woman (severe preeclampsia, eclampsia, insolvency of the scar), severe obstetric pathology, with the immaturity of the cervix and the absence of conditions for urgent delivery, a council of doctors resolved the issue of operative delivery.

**Table 1:** Bishop Cervical Maturity Assessment

Signs	Points			
	0	1	2	3
Disclosure	<1	1-2	3-4	>5
Length (length)	>4cm	2-4cm	1-2cm	<1cm
Consistency	Dense	Average	Soft	-
Neck position	Back	Centered	-	-
The preceding part	-3 or higher	-2	-1 or 0	+1 or lower

It is important to distinguish between the purpose of pre-induction and induction of labor. Pre-induction of labor (“maturation” of the cervix, cervical ripening) is the preparation of the cervix for childbirth by methods that are insufficient for self-induction of labor. Induction of labor (induction of labor) is an intervention aimed at initiating labor before spontaneous onset in order to achieve vaginal delivery. Induction of labor is also called artificially induced labor for indications from the mother or fetus, as well as for combined indications (premature, timely, late) [9,10]. According to the recommendations of foreign literature, in case of PROM at a gestational age of more than 34 weeks at the risk of developing AIS (amniotic infection syndrome - amniotic infection syndrom), delivery should be carried out by induction of labor, in the absence of labor activity for 4-6 hours - active induction of labor [11]. In case of PROM before 37 weeks of gestation, antibiotic therapy was prescribed immediately. At a gestational age of more than 37 weeks in the absence of signs of AIS, the use of antibiotics was started 18 hours after PROM. If spontaneous labor has not occurred within 8 to 12 hours of PROM with AIS, an active tactic is indicated - induction of labor. The prophylactic use of antibiotics in case of premature rupture of the membranes is also justified [6,7].

For the purpose of pre-induction of labor, prostaglandins are used: Glandin 3 mg or dinoprostone (Pge2) pervaginum gel; the initial dose is 2 mg in nulliparous women with an immature cervix, 1 mg in multiparous women. If regular labor has not

begun, a second dose of dinoprostone 1 or 2 mg after 6 hours can be administered. The maximum dose of dinoprostone over a 12-hour period is 4 mg for nulliparous women with an “immature” cervix, 3 mg for all other women.

A debatable issue is the possibility of pre-induction of labor with antigestagens (mifepristone) with DRPO in AFD with the onset of admission to the hospital in women with uterine scars. On the one hand, the rationale for the use of mifepristone is the presence of contraindications for the use of prostaglandin E, prepil-gel, kelp: vaginal dysbiosis, the presence of intrauterine infection, polyhydramnios, oligohydramnios, fetal hypoxia. On the other hand, the evidence base on the safety of using mifepristone in antenatal fetal death was carried out on the basis of the Department of Obstetrics and Gynecology of the city of Bukhara from 2012 to the present day, where pregnancies were terminated at various gestational ages. However, women with scars on the uterus in the absence of labor and discharge of amniotic fluid with no effectiveness of labor induction with mifepristone 200-400 mg ended by caesarean section with indications of the failure of the scar on the uterus. Nevertheless, the existing significant experience in the use of mifepristone as a preinducer of labor and its proven efficacy allow us to expect in the near future the appearance of scientific and practical data on its use in preinduction of labor in women with uterine scars in antenatal fetal death with PPRM, on a comparison of the risk of its use with expectant or operational tactics.

In the Bukhara city maternity hospital, to assess the

dynamics of the biological transformation of the cervix, an ultrasound assessment of the cervix and lower segment of the uterus is carried out. The transvaginal and transperineal access is used (PHILIPSHD11 device with a 5-7 MHz probe, Toshiba Aplio MX with a 3.5 MHz transperineal probe and a 6.0 MHz transvaginal one), the diameter of the internal os was estimated; thickness of the anterior wall of the lower segment of the uterus; posterior angle of the cervix; dopplerometric indicators of cervical blood flow and contractile activity of the uterus and the duration of fetal death (color and power Doppler mapping). Also, when assessing the dynamics of the advancement of the fetal head through the birth canal during childbirth, the distance between the fetal head and the perineum was estimated using ultrasound and transperineal access, which also minimized the need for vaginal examination. Transabdominal access allows you to determine the type of presentation and the position of the fetus. With ultrasound, the following data are evaluated: the length of the cervix is measured along a line drawn through the center of the cervical canal (anechoic or hypoechoic space) from the vaginal part of the decidual plate (ultrasonic internal os) to the base of the ultrasonic external os; diameter of the internal pharynx; thickness of the anterior wall of the lower segment of the uterus; posterior angle of the cervix; Doppler indicators of cervical blood flow (color and power Doppler mapping). Also, when assessing the dynamics of the advancement of the fetal head through the birth canal during childbirth, the distance between the fetal head and the perineum was estimated using ultrasound and transperineal access, which also minimized the need for vaginal examination. At a gestational age of 28 to 34 weeks, active expectant management is considered a priority, the purpose of which is to prevent the development of clinically and histologically significant chorioamnionitis. In case of an increased risk of developing chorioamnionitis (an increase in leukocytosis by more than 15-20% of the initial level, neutrophils and especially C-reactive protein) and the presence of negative dynamics in the functional state of the mother-placenta-fetus system (a decrease in the amniotic fluid index, a decrease in the cranial index, negative dynamics with dopplerometry in the fetal middle cerebral artery) expectant management should be abandoned. They choose either active-expectant tactics (pre-induction of labor), or active - induction of labor (oxytocin with a "mature" cervix and conditions for quick and gentle delivery) or operative delivery by caesarean section with scars on the uterus. The tactics of pregnancy management and

the method of delivery are always discussed jointly by councils of obstetricians and gynecologists.

Ultrasound examination of the kidneys and bladder revealed that all pregnant women with PROM and IUS - 45 (86,5%) have chronic pyelonephritis. Hydronephrosis was diagnosed in 16 (30,7%) women. Fetal ultrasound revealed that uterine hypertonicity occurs in 100% of pregnant women with PROM and IUS.

Thus, assessing the parity of pregnancy, we note that in all three study groups, the number of women with the first pregnancy predominated 28 (53,8%), 40 (76,9%) and 12 (23%), respectively. The number of women with a second pregnancy in group I was 17 (32,7%), in group II - 14 (27%), and in the control group 10 (19,2%). Most of the pregnant women in the study groups were at the gestational age of 30 to 34 weeks, their total number was 8 (15,4%), and at the period of 35- 37 weeks - 32 (61,5%) women.

All the studied patients complained of pain in the lumbar region, which is considered one of the main signs of the threat of preterm labor. In group I, 7 (13,5%) pregnant women complained of an increase in body temperature, and in group II, 23 (44,2%) women complained. Also, the course of various diseases was identified, against which the pregnancy proceeded in the groups under consideration. Anemia in group II was 2.7 times more common than in group I, CVD was 5.3 times more common. Varicose veins of the lower extremities in group I were detected in 22 (42,3%) pregnant women, and in group II in 26 (50%) women. When comparing the incidence of chronic tonsillitis between the studied groups, it was found that this pathology is 2.4 times more common in group II. In a comparative analysis of the results of a smear from the vagina of pregnant women, it was found that in the II group of the study there are higher rates of leukocytes, squamous epithelium, pathological elements than in the I group. *E. coli* and staphylococci were detected in 16 (30,8%) pregnant women of group I and 27 (52%) women of group II. Streptococci in group II met 6 times more frequently than in group I. An increase in the number of leukocytes in a smear indicates the presence of inflammatory processes, and an increase in the number of squamous epithelium may be associated with inflammation, due to which cells are destroyed in an "increased volume" or an excess of estradiol, which stimulates the proliferation (division and growth) of epithelial cells, thereby increasing their total number.

When conducting a biochemical blood test, it was revealed that the highest level of urea is observed in



the II studied group (7.65), and in the I group the level of urea is 1.5 times higher than in the control group. An elevated level of urea is considered one of the main signs indicating the presence of an inflammatory process in the urogenital system. The level of total bilirubin in groups I and II is 2 times higher than in the control group. ALT and total protein values were within normal limits.

From the general blood test, we found that in groups I and II of the study, when compared with the control group, there is a decrease in the amount of hemoglobin and erythrocyte, and there is also an increase in the number of leukocytes in groups I and II, in contrast to the control group. The rest of the CBA indicators are within the reference values.

In the I and control groups, the general analysis of urine did not reveal any pathological indicators. In group II, CAU showed an increase in the number of leukocytes, protein, density and a slight increase in the number of erythrocytes and cylinders.

Preeclampsia joins at least 40% of pregnant women with chronic pyelonephritis, and in our study, CP, preeclampsia joined in 34 pregnant women with UPR and UTI. According to the results of laboratory and instrumental studies, it was diagnosed that 19 patients had moderate PE with proteinuria (protein more than 1 g/l) and leukocyturia, and the remaining 15 had severe PE with severe proteinuria (protein more than 5 g/l) and leukocyturia.

With prolongation of pregnancy and repeated detection of pathogenic flora discharged from the cervical canal in a clinically significant titer, antibiotic therapy is resumed (second-generation cephalosporins, metronidazole); wait-and-see tactics are abandoned.

Thus, the question of the tactics of managing antenatal fetal death in the presence of a uterine scar with PPRM and PROM remains unresolved, multicenter studies need to be continued, which will allow us to analyze the outcomes of childbirth depending on the duration of pregnancy, the duration of the anhydrous period, the response of the woman's body to PPRM, the presence of concomitant obstetric and extragenital pathology, the woman's age, obstetric history and individual choice of the method of induction.

### Conclusions

Clinical and anamnestic risk factors for AFD complicated by PROM are a history of endometritis, pathological growth of opportunistic cervico-vaginal microflora, chlamydia, nonspecific colpitis, and bacterial vaginosis. The presence of infections

(primarily herpetic and ureaplasmosis) adversely affects the course of pregnancy and childbirth. After 18 hours of an anhydrous interval, the tactics of labor management should be conservative - expectant up to 24-48 hours on the background of antibiotic therapy, if labor does not occur on its own, it is necessary to start induction of labor with antiprogestins and prostaglandins. In the presence of vaginal infections, the antiprogesterin mifepristone 200 mg per os is recommended for induction. Induction of labor in uterine scars with antenatal fetal death is an activation of uterine contractility with the onset of labor, while successful induction is a natural delivery within 24-48 hours.

### Acknowledgments

The authors are grateful for the support and helpful comments provided by the department of Obstetrics and gynecology in Bukhara State Medical Institute, as well as other experts consulted as part of the process. We would also like to thank Bukhara city maternity complex for her assistance in creating the figure for our literature search.

### References

1. Bakhodirova, S. F., Ikhtiyarova, G. A., Aslonova, M. J., & Davlatov, S. S. (2020). Features of perinatal outcomes in women after supporting reproductive technologies. *European Journal of Molecular & Clinical Medicine*, 7(2), 6350-6356.
2. Bakhramova, S. U., Ikhtiyarova, G. A., Dustova, N. K., & Kudratova, R. R. (2021). Thrombophilic Complications in the Development of Gestational Hypertension. *Annals of the Romanian Society for Cell Biology*, 6198-6205.
3. BOZOROV, A. G., IKHTIYAROVA, G. A., & DAVLATOV, S. S. (2020). Biochemical Markers for Prediction of Premature Labor in Urogenital Infections. *International Journal of Pharmaceutical Research (09752366)*, 12(3).
4. Ikhtiyarova, G. A., Tosheva, I. I., Aslonova, M. J., & Dustova, N. K. (2020). Prenatal rupture of amnion membranes as A risk of development of obstetrics pathologies. *European Journal of Molecular and Clinical Medicine*, 7(7), 530-535.
5. Ikhtiyarova, G. A., Tosheva, I. I., & Narzulloeva, N. S. (2017). Causes of fetal loss syndrome at different gestation times. *Asian Journal of Research*, 3(3).
6. Mavlyanova, N. N., Ixtiyarova, G. I., Tosheva, I. I., Aslonova, M. Z., & Narzullaeva, N. S. (2020). The State of the Cytokine Status in Pregnant Women with Fetal Growth Retardation. *J Med-*

*Clin Res & Rev*, 4(6), 1-4.

7. Navruzova, N. O., Karshiyeva, E. E., Ikhtiyarova, G. A., Hikmatova, N. I., Olimova, N. I., & Muminova, N. K. (2021). Clinical and laboratory markers forecasting of cervical diseases and its prevention. *Annals of the Romanian Society for Cell Biology*, 13098-13110.
8. Oripova, F. S., Ikhtiyarova, G. A., Shukurlaev, K., & Khamdamova, M. T. (2021). New methods of correction of inflammatory diseases of the genitalia (clinical and experimental study). *Annals of the Romanian Society for Cell Biology*, 1865-1872.
9. OROPOVA, F. S., IKHTIYAROVA, G. A., & DAVLATOV, S. S. (2021). Pathomorphological characteristics of the vaginal mucosa in experimental nonspecific vaginitis and various methods of treatment. *International Journal of Pharmaceutical Research (09752366)*, 13(1).
10. KUDRATOVA, D. S., IKHTIYAROVA, G. A., & DAVLATOV, S. S. (2021). Medical and social problems of the development of congenital malformations during a pandemic. *International Journal of Pharmaceutical Research (09752366)*, 13(1).
11. Tosheva, I. I., & Ikhtiyarova, G. A. (2020). Pregnancy outcomes with premature rupture of membranes. *RMJ. Mother and Child*, 3 (1), 16-19.
12. Tosheva, I. I., Ikhtiyarova, G. A., & Aslonova, M. J. (2019). INTRODUCTION OF CHILDBIRTH IN WOMEN WITH THE DISCHARGE OF AMNIOTIC FLUID WITH INTRAUTERINE FETAL DEATH. *Problems and solutions of advanced scientific research*, 1(1), 417-424.