

MODERN ASPECTS OF DIAGNOSIS IN PREMATURE AMNIOTIC FLUID RETENTION

Gaybullayeva Lobar Sagdullaevna

Davronova Mahliyo Alisherovna

Scientific supervisor: Professor Negmadjanov B.B.

Department of Obstetrics and Gynecology №2, Samarkand State Medical University,
Samarkand, Uzbekistan

<https://doi.org/10.5281/zenodo.14715746>

Annotation. Premature amniotic fluid retention (PAFR) remains one of the most urgent problems of modern obstetrics, as it significantly increases the risk of complications in labor. In this work we studied the pathogenesis of uterine contractile initiation disorders in PIUI, taking into account the peculiarities of steroid hormone metabolism and fetal hormonal status. We examined 193 patients divided into a control group, a main group (with PAFR) and a comparison group (with timely amniotic fluid shedding). It was found that PIOB is accompanied by hyperprogesteronemia, decreased concentration of cortisol, dehydroepiandrosterone-sulphate (DEAS) and estradiol, and insufficient oxytotic activity. These findings indicate that the biological readiness of the fetus for labor is impaired, necessitating the use of synthetic anti-gestagens and oxytocin to stimulate labor activity.

Keywords: premature amniotic fluid retention, pathogenesis, steroid hormones, cortisol, progesterone, estradiol, dehydroepiandrosterone sulfate (DEAS), oxytocin, induction of labor, uterine contractility.

Relevance. One of the topical and debated issues in modern obstetrics is the management of labor in premature amniotic fluid loss (PAFL). The incidence of bladder rupture before the onset of labor in preterm pregnancies varies from 10% to 19.8%, and this figure has increased 1.5-2 times in recent decades.

The relevance of the topic of diagnosing premature retention of amniotic fluid (polydammia) can be substantiated by various scientific data and studies that emphasize the importance of timely diagnosis and understanding of this condition. Here are some aspects confirming the relevance:

Polydammion occurs in 1%-2% of all pregnancies, but its incidence is significantly increased in certain risk groups (for example, multiple pregnancies and diabetes). This emphasizes the need for early diagnosis.

According to the Centers for Disease Control and Prevention (CDC), half of all cases of polydammion are associated with diabetes, making screening important for subgroups of women.

Research shows that polydammion is associated with an increased risk of complications such as preterm labor, rupture of membranes, and fetal malposition. According to numerous studies, polydammion may increase the risk of perinatal mortality by 30%-40%.

A study published in the American Journal of Obstetrics and Gynecology found that high amniotic fluid levels predicted the development of conditions such as premature placental abruption and respiratory distress syndrome in the newborn.

Premature amniotic fluid discharge may increase maternal complications (such as preeclampsia), which also highlights the need for monitoring of the mother and fetus.

The study results show that women with polydammion are more likely to have a cesarean section, which will require more careful diagnosis and management.

Modern technologies, such as high-quality ultrasound scanning and fetal monitoring methods, can improve the accuracy of polydammion diagnosis and closely monitor the fetus.

Research conducted in the Journal of Ultrasound in Medicine shows that the use of new imaging techniques improves prediction and diagnosis, helping physicians respond to potential risks.

Awareness of polydammion and its complications can affect the psycho-emotional state of mothers. The stress and anxiety associated with abnormal amniotic fluid levels highlight the importance of maternity care professionals.

Research shows that educating mothers about the risks is associated with improved pregnancy outcomes.

The diagnosis of premature amniotic fluid retention is an important task in modern obstetrics, associated with a high risk of complications for both mother and fetus. Scientific data on the frequency of cases associated with serious complications, as well as improvements in diagnostic technologies, confirm the need for in-depth assessment of this topic. It is important to continue research in this area to improve practice and reduce risks.

Purpose of the study – the study of pathogenetic mechanisms of impaired initiation of uterine contractile activity in PAFL with emphasis on the peculiarities of steroid hormone metabolism and changes in the hormonal status of the fetus.

Materials and methods. To achieve this goal, a comprehensive examination of 193 women treated in the maternity department of the perinatal center of Samarkand City was carried out. The study included: the control group (45 patients with physiological preterm pregnancy), the main group (106 women in labor with PAFL), and the comparison group (42 women with timely amniotic fluid retention - TAFL).

Results of the study. Progesterone concentration in venous blood was elevated in patients with PAFL.

- Serum cortisol levels from the maternal ulnar vein and the umbilical artery and vein were lower in PAFL compared with TAFL.

- Estradiol concentration remained minimal in women from the main and control groups.

- Dehydroepiandrosterone-sulfate (DEAS) levels were statistically lower with TAFL than with TAFL.

- The lowest oxytocin concentrations were observed in patients who underwent cesarean section for TAFL.

Conclusions. Premature amniotic fluid shedding is accompanied by a lack of biological readiness of the fetus for labor, which is expressed by hyperprogesteronemia, and decreased levels of cortisol, DEAS, and estradiol. Corticosteroid deficiency prevents adequate activation of the mechanisms responsible for the initiation of uterine contractile activity.

The increased concentration of progesterone in the blood of patients with PAFL confirms the pathogenetic feasibility of using synthetic anti-gestagens for induction of labor.

Decreased blood oxytocin levels and insufficient oxytocin activity of amniotic fluid in PAFL explain the need to use oxytocin to induce labor.

References:

1. Cunningham, F. G., Leveno, K. J., Bloom, S. L. Williams Obstetrics. 25th edition. New York: McGraw-Hill; 2018.
2. Kh, Kobilova Z., and Zubaydulloeva Z. Kh. "FEATURES OF HEART RHYTHM DISORDERS AT DIFFERENT STAGES OF GESTATION." Talqin va tadqiqotlar ilmiy-uslubiy jurnali 2.54 (2024): 272-277.
3. Khudoyarova, D. R., Kobilova Z. Kh, and Zubaydulloeva Z. Kh. "ARRHYTHMIAS IN PREGNANCY: TACTICS OF PATIENT MANAGEMENT." Eurasian Journal of Medical and Natural Sciences 4.9 (2024): 119-123.
4. Shopulotova, Z. A., and Z. Kh Zubaydilloeva. "THE VALUE OF ULTRASOUND DIAGNOSTICS IN PREGNANT WOMEN WITH CHRONIC PYELONEPHRITIS." Бюллетень студентов нового Узбекистана 1.9 (2023): 19-22.
5. Shopulotova, Z., Sh Shopulotov, and Z. Kobilova. "MODERN ASPECTS OF HYPERPLASTIC PRO." Science and innovation 2.D12 (2023): 787-791.
6. Shopulotova, Z., Sh Shopulotov, and Z. Kobilova. "MODERN VIEWS ON THE EFFECTIVENESS OF OZONE THERAPY." Science and innovation 2.D12 (2023): 781-786.
7. Shopulotova, Z., Z. Kobilova, and F. Bazarova. "TREATMENT OF COMPLICATED GESTATIONAL PYELONEPHRITIS IN PREGNANTS." Science and innovation 2.D12 (2023): 630-634.
8. Shopulotova, Z., Z. Kobilova, and Sh Shopulotov. "INFLUENCE OF PREECLAMPSIA ON SOMATIC DISEASES." Science and innovation 2.D12 (2023): 778-780.
9. Shopulotova, Z., Z. Kobilova, and Sh Shopulotov. "URINATION DISORDERS IN PREGNANT WOMEN." Science and innovation 2.D12 (2023): 774-777.
10. Simpson, K. R., Creehan, P. A. Perinatal Nursing. 5th edition. Philadelphia: Lippincott Williams & Wilkins; 2019.
11. Smith, R., Mesiano, S., Chan, E.-C. The Role of Progesterone and Cortisol in the Regulation of Parturition. Frontiers in Endocrinology. 2019; 10: 785.
12. World Health Organization. Preterm Birth: Causes and Consequences. Geneva: WHO; 2018.
13. Zhu, Y., Zhang, X., Lu, H. Influence of Steroid Hormones on Myometrial Contractility in Premature Rupture of Membranes. Journal of Maternal-Fetal & Neonatal Medicine. 2020; 33(10): 1625-1632.
14. Айрапетов, С. А., Новиков, В. Н. Окситоцин в индукции родов при осложнённой беременности. Российский журнал акушерства и гинекологии. 2018; 7(2): 56-60.
15. Бабенко, С. А., Поляков, С. И. Преждевременное излитие околоплодных вод: этиология, патогенез, тактика ведения. Международный медицинский журнал. 2019; 2(5): 12-19.
16. Гуртовенко, Г. Д. Особенности гормонального статуса при преждевременном излитии околоплодных вод. Журнал акушерства и гинекологии. 2020; 4(6): 45-49.
17. Николаева, И. В. Преждевременное излитие околоплодных вод: проблемы и современные подходы. Российский вестник акушера-гинеколога. 2021; 11(3): 23-27.
18. Фомина, Е. А., Савельев, А. Г. Преждевременное излитие околоплодных вод: диагностика и лечение. Клиническая медицина. 2020; 98(1): 14-20.

19. Шопулотова, З. А., and З. Х. Зубайдиллоева. "ПЕРИНАТАЛЬНАЯ НЕФРОЛОГИЯ: ПРОФИЛАКТИКА ОСЛОЖНЕНИЙ У БЕРЕМЕННЫХ С ХРОНИЧЕСКИМ ПИЕЛОНЕФРИТОМ." Центральноазиатский журнал образования и инноваций 2.9 (2023): 79-82.
20. Шопулотова, Зарина Абдумуминовна, and Дилдора Рахимовна Худоярова. "ХРОНИЧЕСКИЙ ПИЕЛОНЕФРИТ И БЕРЕМЕННОСТЬ: ВЛИЯНИЕ КОМОРБИДНОСТИ И ЕГО ПРОЯВЛЕНИЯ." ЖУРНАЛ РЕПРОДУКТИВНОГО ЗДОРОВЬЯ И УРО-НЕФРОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ 4.4 (2023).