

Research Article



Estimation of Anamnesis and Gestation Course, Complicated with Premature Discharge of Amniotic Fluids

Izzet Arif Shamkhalova*, Nigar Adalat Ibragimova¹

*Doctor, Professor, Azerbaijan State Doctors Improvement Institute (AZSDII), SRI of obstetrics and gynecology of MH of Azerbaijan Republic, Azerbaijan.

¹Postgraduate, Azerbaijan State Doctors Improvement Institute (AZSDII), SRI of obstetrics and gynecology of MH of Azerbaijan Republic, Azerbaijan.

*Corresponding author's E-mail: aramz@gmail.com

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ABSTRACT

The objective of the study is to study the pregnancy with premature discharge of the amniotic fluids and cases of premature rupture of the membrane. The experiment concerning the topic of the research was held. It is the comparison on the basis of the socio-demographic data, medical data, obstetrics-gynecological data, and also on the basis of the conditions during the pregnancy with premature discharge of the amniotic fluids and cases of premature rupture of the membrane. Edema (8.2%) and anemia (24.5%) were most frequently met in the pregnant women of I group, however the protein in urine was not detected. Albuminuria was detected in 2.0% cases, edema – in 6.0% and anemia – in 20.0% in the pregnant women of II group. In the presence of albuminuria was detected in 7.4%, edema – in 1.2% and anemia – in 9.9% in the pregnant women of III group. The pregnancy course in women with premature discharge of amniotic fluids is characterized by complications, which are caused by different factors. They are related to unsatisfactory social and living conditions; unsettle state of family life, low educational level, repeated and frequent pregnancies, young and elder age of woman to the social-demographic factors.

Keywords: pregnancy, complications, premature discharge of the amniotic fluids.

INTRODUCTION

Pre-delivery discharge of amniotic fluids represents the complex obstetrics problem, many aspects of which in great extent remain unsolved in connection with the absence of single opinion in relation to the pregnancy outcome for mother and fetus.^{6,7} In connection with this for achievement of health improvement of mother and child are presently developed by the rational tactic programmes of pregnant women management with premature discharge of amniotic fluids.^{2,4}

Premature discharge of amniotic fluids is met in the timely deliveries in 10-19% cases.⁶ The long-term time without amniotic fluids is dangerous by the development of suppurative-septic complications in mother and fetus.

Until now this circumstance is an indicator for conduction of delivery induction in 2-3 times after premature discharge of amniotic fluids. However, this tactics often leads to the development of anomalies of delivery activity and fetus hypoxia in deliveries and, as a result, to the increase of frequency of operative delivery and natal complications.^{3,5}

The aim of the research is to study peculiarities of pregnancy management and delivery outcome at the premature discharge of amniotic fluids.

Premature rupture of the fetal membrane may have serious consequences for the neonate, such as premature delivery, fetal distress, prolapse of funis, abruption of placenta, and infection.^{9,10} This pathology is the cause of 20 to 40% of amblois cases, and the risk thereof doubles in cases of multiple fetation and abnormal alvus

development⁹ and is the cause of 20-50% of all premature delivery cases, mother's and perinatal mortality, fetus's lung hypoplasia, prolapse of funis, deformity of fetus, and postpartum endometritis.¹²

All these complications significantly increase the morbidity and mortality rates of mother and fetus, and until present this problem remains one of the topical and complex in obstetrics.

The topicality of this problem should be considered in accordance with the number of premature deliveries throughout the world: thus, for example, in the USA 7.5 % of total annual deliveries are premature^{15,16}, the premature delivery rate in Russia in the last 25 years remains within 7 %⁸, in France the premature delivery rate has remained at 5 % since the mid-1980th, about 6 % in Australia, 8 % in Norway, and 6.8 % in Scotland.^{14,15}

1/3 of over 400,000 premature deliveries in the USA are associated with the premature rupture of the membrane.¹⁵ According to data in the literature, 35 % of premature deliveries are accompanied by premature discharge of amniotic fluids.^{11,13} In 70-80% of cases, deliveries take place within 1 week after PDAF. According to A. Jazayeri [2008], premature discharge of amniotic fluids causes complications in 3 % of total pregnancies and occurs in approximately 150,000 pregnancies in the USA.

MATERIALS AND METHODS

A complete clinical laboratory physical examination was conducted, and the gestation course of women with the threat of miscarriage, as well as with different pathologies of premature ruptures of the membrane



(basic group) and with physiologic gestation (control group), were studied.

214 pregnant women were under observance in the second and third trimester aged from 18 to 43 years old (average age is 27.3 ± 3.82 years old). The basic group was made by 180 pregnant women with the threat of pregnancy interruption, and also different pathology of premature rupture of fetal membranes. In the control group 34 women with physiological course of pregnancy entered into this group. The pregnant women with threat of PRFM were divided into three groups according to the term of gestation: I group – 16-21 weeks of gestation – 49 (27.2%), II group – 22-27 weeks of gestation – 50 (27.8%), III group – 28-36 weeks of gestation – 81 (45%).

The data of anamnesis of all patients, course and complication of the present pregnancy, deliveries and post-natal period were studied. The data of somatic and obstetrics anamnesis were analyzed.

The complete examination of pregnant women from the basic and from the control groups included collection of anamnestic data, traditional and special laboratory tests of blood, urine, vaginal content, as well as the study of the indices of non-invasive ultrasound investigation.

The materials of study were developed at assistance of computer programme STATISTICA 6.0.¹ The criteria of significance $p > 95\%$ was taken as the minimal threshold of reliability.

The studies have been approved by a research ethics committee at the institute of obstetrics and gynecology of the Scientific – Research Institute of Obstetrics and Gynaecology, 10 June 2015, № 14PX/15.

RESULTS

According to the design of conducted study, I experimental group was made by 81 ($45.0 \pm 4.9\%$, $p \leq 0.001$) pregnant women with the threat of premature miscarriages (gestation term is 16-21 weeks), complicated by premature discharge of amniotic fluids. 50 ($27.8 \pm 5.8\%$, $p \leq 0.001$) patients with the threat of late miscarriages (gestation term is from 22 to 27 weeks) entered into II group. 49 ($27.2 \pm 4.7\%$, $p \leq 0.001$) examined ones with the threat of premature deliveries (gestation term is 28-36 weeks) entered into III group.

The examined women of I group were aged from 18 to 31 years old that made in average 22.72 ± 4.72 years old. Among pregnant women of II and III groups the age range was represented from 18 to 36 years old. The pregnant women, included in the control group, were aged within from 20 to 30 years old, average age is 23.28 ± 7.93 years old.

The results of conducted study showed that in I group the first pregnancy was in 47 (58.0%), and repeated pregnancy – in 34 (42.0%) of women. In women of the control group the first pregnancy was observed in 10 (52.6%), and repeated pregnancy in 9 (47.4%) patients.

Primipara pregnant women in I group were 60 (74%), multipara – 21 (25.9%). In the group of healthy pregnant women there were 12 (63.1%) and 7 (36.8%), respectively.

It follows from the data stated that pregnant women differed by number of primary and repeated deliveries. Thus, the number of primipara women of I group in several times exceeded the same one in the control group for 5.4%, and the number of multipara women was smaller at the same quantity. It should be noted that from 18 (37.5%) of multigravida of I group 10 (20.8%) women were primipara ones, and in the group of healthy pregnant women – from 4 (57%) only 2 (28.6%) were primipara women. At comparison of indicators of all three experimental groups it was detected that the first pregnancy in II group made 28.0% (14 women) cases, and in III group – 29.3% (12) cases. The number of repeated pregnant women in these groups made respectively 37 ($73.4 \pm 6.3\%$, $p \leq 0.001$) and 36 ($73.3 \pm 6.2\%$, $p \leq 0.001$) patients. In II group of primipara women was 26 ($52.0 \pm 5.3\%$, $p \leq 0.001$), and in III group – 28 ($57.1 \pm 4.9\%$, $p \leq 0.001$) respectively. Multipara women with gestation term 22-27 weeks made 42.0 \pm 5.8% cases (21 pregnant women), with the term of pregnancy 28-36 weeks – 49.0 \pm 8.2% cases (24 women).

The pregnant women of I group indicated on the age of menarche beginning from 10 to 16 years that averagely made 13.10 ± 0.70 years old. The early age of menarche beginning is 10 years was marked in I group in 9 (18.7%) pregnant women, on the later menarche (16 years) marked 6 (16.7%) pregnant women. In II and III groups, as in I group the age of menarche beginning fall on the interval of 10-15 years. However, the early age of menarche beginning (in 10 years) was marked only in 4 women in each group that made respectively 8 ± 1.9 and 8.2 ± 2.1 % cases. In the control group the age of menarche beginning was registered within the limits of 11-15 years that made averagely 12.8 ± 2.7 years old.

It is known that social factors are the important factor of risk of pregnancy interruption on the early terms (up to 28 weeks) and premature deliveries. The conducted studies showed that pregnant women in all three experimental groups with premature discharge of amniotic fluids were under effect of such factors, as the low level of social provision, disorder of family life and harmful conditions in the daily routine and on the work.

In the process of study the dependence in the development of premature discharge of amniotic fluids from several medical factors of risks was detected.

The analysis of anamnestic data showed that abortions and interrupted pregnancies up to 28 weeks in the examined pregnant women, premature deliveries and diseases of urogenital system of inflammatory character took place (Figure 1). On the whole, in the group of pregnant women with premature discharge of amniotic fluids the number of abortions was registered in 102



(56.7±4.9%) women, that in 1.7 times higher than in the control group (32.3±4.0%), the number of miscarriages – in 157 (87.2±2.7%), that in 4.5 times exceeded indicators of control group (17.6±5.5%). The premature deliveries in the anamnesis were met only in the patients with premature rupture of fetal membranes in 53.9±5.1% cases (97 women). 168 (93.3±1.92%) women of experimental and 6 (17.6±5.5%) patients of the control group indicated on presence of urinogenital infection.

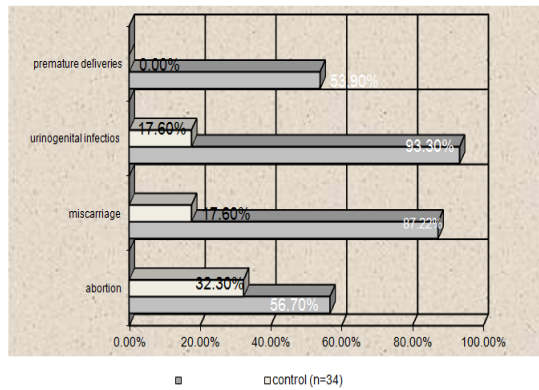


Figure 1: Indicators of obstetrics anamnesis in the examined pregnant women

Among the previous diseases in the patient’s anamnesis there were frequent ARVI until the present pregnancy – 45.5% cases (82 women), anemia – in 50.0% (90) cases, hypertension disease – in 29.4% (53) cases, hypotonic disease – in 17.8% (32) cases, digestive system diseases – in 9.4% (17) cases, urinary system – in 27.2% (49) cases.

From the gynecological diseases in the anamnesis in the period between pregnancies in the patients of experimental group, coelitis of different etiology was met in 39 (21.7%), salpingo-oophoritis in 27 (15.0%), endocervicitis in 5 (2.7%).

This pregnancy passed with complications in 142 (78.8±3.2%, p≤0.001) pregnant women of experimental group. These complications displayed themselves in pains in lumbar spine and in the lower abdominal department, periodic pressure boost, anemia and presence of protein in the urine.

The results of study showed that in pregnant women in all experimental groups met more frequently in the lower abdominal department and in the small of back. During collection of anamnestic data the pregnant women complained more frequently on the pain in the small of back with the term of pregnancy 16-21 weeks. At that pains, as a rule, bear spasmodic and also aching-nagging character. On the whole, according to groups the nagging pains were observed in 20 patients, from which in 11 the term of pregnancy made 16-21 weeks. The spasmodic character of pains also was typical for pregnant women of I group – 13 of 19 pregnant women. The dull character pains during long time are most frequently present in the pregnant women of III group (Figure 2).

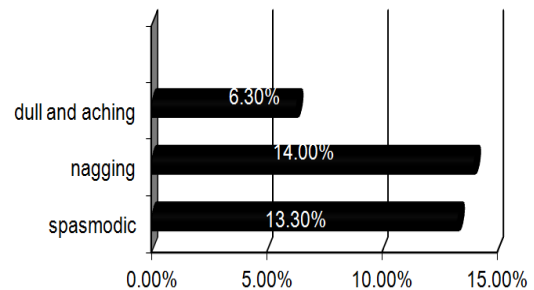


Figure 2: Character of pains in the examined pregnant women of experimental group

Edemas (8.2%) and anemia (24.5%) were most frequently met in the pregnant women of I group, however the protein in urine was not detected (Table 1).

Table 1: Occurrence frequency of pregnancy complications in the experimental groups

Pregnancy complications	Experimental groups					
	I group (n=49)		II group (n=50)		III group (n=81)	
	Abs.	%	Abs.	%	Abs.	%
Lumbar pain	20	40.8	8	16.0	7	8.6
Lower abdominal department pains	27	55.1	13	26.0	7	8.6
Anemic	12	24.5	10	20.0	8	9.9
Hypertension	3	6.1	7	14.0	6	7.4
Albuminuria	-	-	1	2.0	6	7.4
Edemas	4	8.2	3	6.0	1	1.2

Albuminuria was detected in 2.0% cases, edemas – in 6.0% and anemia – in 20.0% in the pregnant women of II group. In the presence of albuminuria was detected in 7.4%, edemas – in 1.2% and anemia – in 9.9% in the pregnant women of III group.

The difference was also detected in relation to indicators of the arterial pressure.

The indicators of arterial pressure increased averagely to 140-150/90-100 mm Hg in the pregnant women of I group.

The average arterial pressure made 150/100 mm Hg in II and III groups.

DISCUSSION

Main findings

The conducted studies showed that pregnant women in all three experimental groups with premature discharge of amniotic fluids were under effect of such factors, as the low level of social provision, disorder of family life and harmful conditions in the daily routine and on the work.

Strengths and Limitations

In the process of study the dependence in the development of premature discharge of amniotic fluids from several medical factors of risks was detected. The analysis of anamnestic data showed that abortions and interrupted pregnancies up to 28 weeks in the examined pregnant women, premature deliveries and diseases of urogenital system of inflammatory character took place.

Interpretation

Thus, the pregnancy course in women with premature discharge of amniotic fluids is characterized by complications, which are effected by different factors. We should relate to unsatisfactory social and living conditions, unsettle state of family life, low educational level, repeated and frequent pregnancies, young and elder age of woman to the social-demographic factors. The previous medical abortion, spontaneous miscarriages, infectious and inflammatory urinogenital system diseases serve as clinical-anamnestic factors of risk. The different complications of the current pregnancy, such as the threat of premature pregnancy interruption, previous extragenital, infectious and viral diseases are also the factors of risk of the premature rupture of fetal membranes.

CONCLUSION

The conducted study allows to conclude that the etiologic factors of the PRFM are complex and diverse. That creates difficulties in diagnostics, selection of treatment methods and prophylaxis of this pathology. The timely diagnosis is very important because premature discharge of amniotic fluids is associated with serious consequences for mother and the neonate.

In the process of study, the diagnostic utility of the used methods were unveiled. Therefore, according to our data, the presence of abortions, miscarriages and premature deliveries which may have a certain role in detection of pregnant women with a threat of PRFM and determination the risk groups of pregnant women with the threat of this pathology.

The conducted research and achieved results made it possible to develop an algorithm for diagnostics of this category of pregnant women, which include, along with standard clinic laboratory examinations, transvaginal ultrasound investigation, additional laboratory methods, including detection of protein and cytokines, as well as bacteriological examination of vaginal swabbing. The core

of the diagnostics algorithm should be selection of anamnestic and clinical laboratory criteria characterizing the intensity of changes in fetal membranes.

In such way, accurate adherence to the diagnostic algorithm, including collection of the anamnesis, ultrasound, physical, and clinic laboratory examination allows to determine the reason of the PRFM and to give the prognosis of the further gestation course.

It should be noted that the results of the conducted research reflect just a minor part of a huge work of the scientists of the whole world aimed at determination of the risk factors and improvement of the pathogenesis of premature rupture of fetal membrane.

With the purpose of early diagnosis of interruption of pregnancy and further prognosis of the pregnancy outcome, it is expedient to carry out the monitoring of the concentration of placental lactogen, trophoblastic β 1-glycoprotein and alpha-fetoprotein in the blood plasma of the vaginal secretion.

When obtaining the indices of examinations indicating the premature interruption of pregnancy, it is necessary to consider the issue of administration of hormones with the purpose of prophylaxis of fetus respiratory distress syndrome.

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