



CRITERIA FOR DIAGNOSIS OF ISTHMYCERVICAL INSUFFICIENCY IN MULTIPLE PREGNANCY. CORRECTION METHODS

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According to most researchers dealing with the problem of multiple pregnancies, extreme prematurity occupies a leading place among the causes of high perinatal losses and severe neurological diseases in twins [1, 2, 3, 4]. The frequency of premature births in multiple pregnancy, according to the literature, ranges from 30 to 65% [5, 6]. According to M. Gardner et al. [5], in the structure of the causes of premature birth in multiple pregnancy, 22% belongs to premature rupture of amniotic fluid. In most cases, the opening of the amniotic sac occurs against the background of premature shortening of the cervical canal and opening of the internal pharynx. According to B. Arabin et al ., the cause of the formation of isthmic -cervical insufficiency (ICI) in multiple pregnancy is overextension of the isthmus region against the background of accelerated growth of the uterine cavity [7]. To form a risk group for premature birth in multiple pregnancies, transvaginal ultrasound examination of the cervix, performed in the middle of the second trimester of pregnancy (23-25 weeks), is generally accepted, which makes it possible to develop and apply obstetric tactics aimed at prolonging pregnancy in the form of drug correction and creating therapeutic protective regime [8, 9]. However, it should be noted that the need to take medications and a significant limitation of physical activity make a certain unfavorable contribution to the psychoemotional sphere of a pregnant woman and do not have a guaranteed therapeutic effect [10, 11]. Materials and methods. As an experimental group, we examined 61 women with twin pregnancies without clinical signs of threatened miscarriage. This group did not include patients who delivered early for obstetric indications and patients in whom labor developed prematurely spontaneously, without connection with premature rupture of amniotic fluid. The examination algorithm included measuring the length of the cervical canal using transvaginal access every two weeks from 16 weeks of gestation. Ultrasound examinations in pregnant women were performed using an Aloka ultrasound scanner Prosound SSD - 5500 using Aloka transvaginal sensor UST 9118 - 5.0 MHz. We assessed the results obtained during follow-up of 137 pregnant women with twins, who formed the control group. During the study, the results were statistically processed using the STATISTICA 6.0 software package (StatSoft Inc., USA 2001). When analyzing the material, average values (M), their average standard errors (m), standard deviations (σ) and 95% confidence interval were calculated. The significance of differences was assessed using Student's t-test for related samples. The







probability that the statistical samples differed from each other was set at p < 0.05. Research results. We compared the obtained data on the length of the cervical canal with the due date. In the experimental group, term birth (37 weeks or more) occurred in 26 (42.6%) women, 35 (57.4%) had premature rupture of amniotic fluid and birth before 36 weeks inclusive, of which 14 (23%) premature rupture of amniotic fluid occurred and childbirth occurred before 34 weeks inclusive. Until 16 weeks of gestation, there was no significant difference in the length of the cervical canal depending on the stage of delivery. However, at 18 weeks we determined that there was a clear relationship between cervical canal length and due date. Thus, the length of the cervical canal 38 mm at 18 weeks of gestation characterizes a high risk of premature rupture of waters before 36 weeks of gestation (95% confidence interval for the difference from 6.84 to 10.26, t = 10, p < 0.001). The sensitivity of this criterion in our study was 78%, specificity 97%, LR + 26.0, LR -0.2. According to our data, premature rupture of waters and childbirth before 34 weeks of gestation have a high risk with a cervical canal length of 35 mm at 18 weeks (95% confidence interval for the difference from 8.97 to 13.73, t = 9.6, p < 0.001). This criterion had a sensitivity of 78.5%, specificity of 100%, LR -0.2. We propose to consider the length of the cervical canal 30 mm at 18 weeks of gestation as critical, since at this value premature rupture of amniotic fluid and childbirth before 34 weeks of gestation occurred in all women in our study, the sensitivity of the criterion was 100%, the specificity was 100%. Data on the length of the cervical canal during a physiologically occurring twin pregnancy are presented in table. 1.

Table 1 Dynamics of changes in the length of the cervical canal during twin pregnancy

Срок (недели)	90%	50%	10%
16—17	48	46	42
18—19	48	46	42
20—21	46	43	42
22—23	46	43	42
24—25	46	43	42
26—27	46	42	41
28—29	45	42	40
30—31	44	42	40
32—33	42	40	40
34—35	42	40	35

During the follow-up of 137 pregnant women with twins (control group), we used a cervical canal length of 30 mm at 18 weeks as a diagnostic criterion for ICI, which served as an indication for suturing the cervix. When the length of the cervical canal was from 31 to 38 mm, the pregnant woman was included in the high-risk group and further tactics were determined individually: in the presence of a burdened obstetric and gynecological history (miscarriage, infertility, use of ART), a suture was applied to the cervix, in other cases dynamic control was carried out through 2 weeks. With a









further tendency to shorten the cervical canal, an unloading obstetric pessary was installed in the vagina. ICI at 18 weeks was detected in 18 (13.1%) women. Of these, 13 (9.5%) women had a U-shaped suture placed on the cervix, 5 women refused to have a suture, and for the purpose of correcting ICI, a relieving obstetric pessary was installed in the vagina. Another 42 (30.7%) women with a cervical canal length of less than 38 mm were also included in the high-risk group. Among them, 16 (11.7%) had a complicated obstetric and gynecological history, and therefore a suture was also placed on the cervix. The remaining 26 (19%) women had a relieving obstetric pessary installed in the vagina. Additional measures in the form of tocolytics and significant restriction of physical activity were not used. As a result, a suture was placed on the cervix in 29 (21.2%) pregnant women. There were no obstetric indications for early delivery in this group. The average delivery time was 37.2 ± 0.4 weeks (36–38 weeks). Among women who refused to have a cervical suture, the average delivery time was 32.8 ± 1.5 weeks (28–37 weeks), i.e. correction of ICI by insertion of a relieving obstetric pessary into the vagina in this case was insufficient compared to suture application (95% confidence interval for the difference: 3.76-5.04, t = 14, p < 0.001). Among 26 pregnant women who, in accordance with indications, had an unloading obstetric pessary installed in the vagina, 3 had obstetric complications (in 1 case severe gestosis and in 2 cases - critical condition of the fetus), and they were delivered ahead of schedule. In the remaining 23 (16.8%) pregnant women, the average delivery time was $37.5 \pm \pm 0.3$ (36–39 weeks). Thus, adequate prevention of premature rupture of water was carried out in 55 (40.2%) pregnant women, which made it possible to significantly reduce the incidence of premature birth. Among 137 pregnant women, births before 36 weeks of gestation occurred in 40 (29.2%), which is significantly lower than the indicators of the experimental group (p < 0.02). Discussion. In the sources available to us, we did not find data on the study of the length of the cervical canal in multiple pregnancies in gestational periods earlier than the middle of the second trimester. When forming a risk group for premature rupture of waters with multiple pregnancy at 18 weeks of gestation, there is the possibility of a more radical correction, for example, in the form of a suture on the cervix. A number of modern studies question the effectiveness of suturing the cervix to correct ICI [12, 13]. V. Berghella et al. [14], based on an analysis of a number of literary sources, argue that suturing the cervix during multiple pregnancies is not effective and increases the frequency of births up to 35 weeks. However, they do not specify at what length of the cervical canal and in what period the correction was made. According to our data, the criteria for diagnosing ICI in multiple pregnancies differ from those in singleton pregnancies. The choice of correction method, taking into account the characteristics characteristic of multiple pregnancies, allowed us to prolong pregnancy to 37-38 weeks among women at high risk of preterm birth. Conclusions. The formation of a risk group for premature birth





associated with premature rupture of amniotic fluid during multiple pregnancy is possible at 18 weeks of gestation. The high-risk group includes pregnant women with a cervical canal length of less than 38 mm. The critical length of the cervical canal is 30 mm; in this case, an adequate correction method is to apply a suture to the cervix.

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