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Comprehensive analysis of the causes and risk factors of prenatal causes of fetal anomalies in the Bukhara region.

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In modern obstetrics, the number of pregnancy complications has increased; the overall incidence of newborns has increased. The statistics on the structure of early childhood morbidity and mortality has significantly worsened due to the increased role of perinatal factors [1,2]. Among the main causes of reproductive losses in the perinatal period, intrauterine anomalies in the development of the fetus occupy a consistently leading position. According to the National Center for Birth Defects (USA), from 10 to 20 million children are born annually in the world with congenital and anomalies.) and perinatal losses (20.6%), in the structure of infant mortality (20%), as well as in the structure of child morbidity. [1,3]. Long-term and complex treatment of patients with CONGENITAL MALFORMATIONS, the necessary medical and pedagogical correction of defects, and social assistance to disabled children require significant economic costs. [1,2]. The main efforts of modern perinatology should be aimed at preventing the birth of children with congenital malformationS. Intrauterine anomalies of the heart (IVA) are the most common anomaly of development and, according to statistics, occur with a frequency of 7-12 cases per 1,000 newborns. VAS attracts the close attention of researchers around the world, not only due to the high frequency, but also because they are the main cause of death in children under 1 year of age. [5]. Among children born with CHD, 14-29% die in the first week of life, 19-42% within the first month, and 40-87% of infants do not survive to 1 year. There is a steady increase in the number of newly diagnosed UA and in the structure of mortality from UA, almost 50% falls on UA. The accuracy of prenatal diagnosis of CM varies widely around the world, for example, in Denmark - 11%, in France - 48% [1,4]. In our Bukhara region, the detection of Congenital malformations remains at a low level. Echography, being a mandatory, routine, safe component of prenatal examination, allows us to detect many UAIV of the fetus. However, some of them are not diagnosed [2]. In our region, CM also occupy one of the leading places in the structure of perinatal mortality, in 2009 and 2010 - III place. [4,5].

The purpose of the study: to analyze the effectiveness of the work of the prenatal consultation and the reasons for missed CM.

Research material and methods: The ultrasound diagnostic room is equipped with the following equipment: Voluson-i (2012), Logic-5 (2014), Mindray-DP9900 (2010). 4 doctors work on this equipment. In order to improve prenatal diagnosis in the prevention of hereditary and congenital diseases in children, to prevent the growth of childhood disability in 2021, a prenatal council was created at the OPC in the Bukhara region. The purpose of his work was not only the diagnosis of fetal

UA, but also the development of a pregnancy management plan and delivery tactics. The council consists of a geneticist, an echography specialist, a pediatric surgeon, an obstetrician-gynecologist, a deputy chief physician, and a pediatrician. Experts in cardiology, pediatric resuscitation and intensive care, and traumatology were involved in the work of the council.

Screening examination is carried out three times.

- in the period of 10-14 weeks (assessment of the thickness of the nuchal space of the fetus, the length of the nasal bone);

- within 20-24 weeks (detection of malformations and echographic markers of fetal chromosomal diseases);

- in the period of 30-34 weeks (detection of malformations with late manifestation, functional assessment of the state of the fetus).

Prenatal screening for serum markers in the first trimester:

- plasma protein associated with pregnancy (PAPP-A) and hCG, in terms of 10-14 weeks; In the second trimester:

- alpha-fetoprotein (AFP), unbound (free) estriol (NE) within 16-19 weeks.

There are 11 districts in the Bukhara region, 10 of them conduct screening examinations in the OPC, city polyclinics are carried out in their offices, the remaining 4 districts are also in their central district hospitals, because. they are located far from the regional center.

All defects identified in the regions, city clinics, private offices are sent without fail to the OPC to clarify the diagnosis and determine further management tactics.

Results of the study and their discussion. Identified congenital malformations - 76, interrupted - 43 pregnancies (56% of identified congenital malformations). Urban - 40 (52.6%), rural - 36 people. Table 1 shows that the coverage of I screenings at 10-14 weeks remained low (according to WHO, 85% of pregnant women should be screened), this is due to late registration, incorrect calculation of the gestational age, because. in some areas there are no obstetricians.

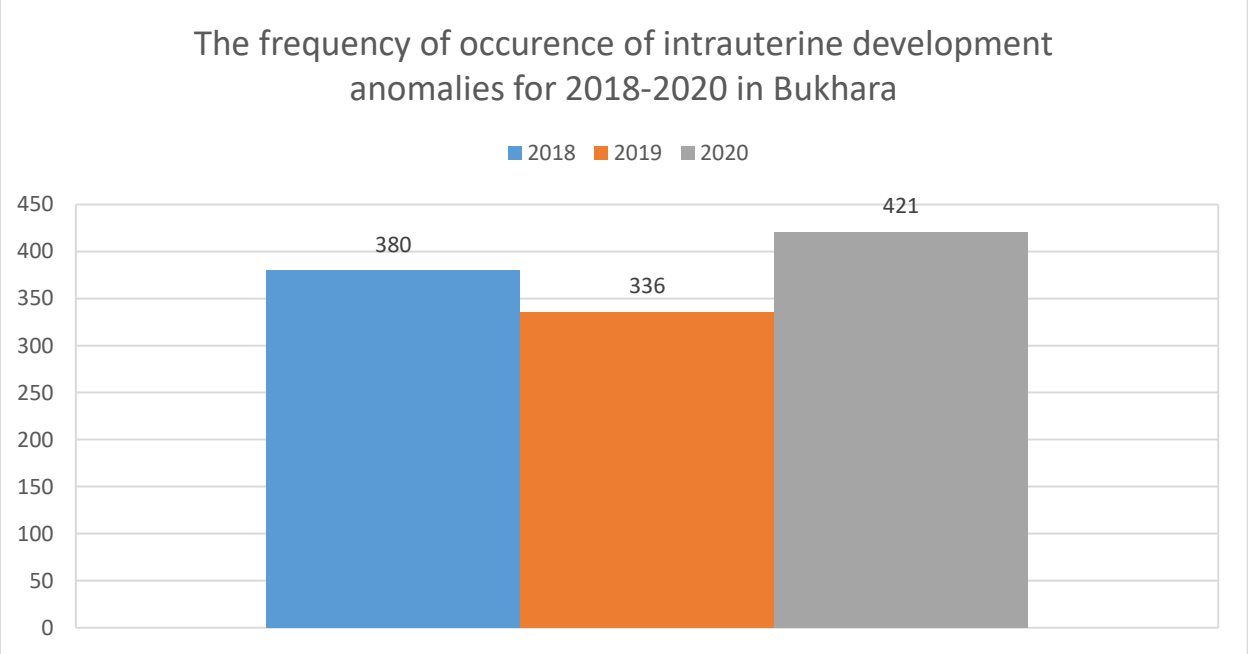
Table 1

Screening of pregnant women in Bukhara region for 2020

Timing Pregnancy	**Screening**	**Coverage of pregnant women with screening**	**Detected**
I trimester	7 681	64%	5
II trimester	9 247	77%	38
III trimester	11 162	93%	3

Diagnosed in the early stages of gestation, MF accounted for 8 (10.5%) of the total number identified MF. Of the 8 identified defects, 6 were interrupted, 2 refused to interrupt. All this shows the high importance of screening echography in the first trimester, when the elimination of the fetus in the presence of anomalies incompatible with life is the least traumatic. During the second screening, 38 congenital malformations were detected, of which 29 were interrupted for medical reasons, 1 child died in utero at 17 weeks (non-immune fetal hydrops), 8 pregnant women prolonged pregnancy. All interrupted pregnancies were subjected to pathological and anatomical examination, the diagnoses were confirmed. In the city, 8 people were sent for delivery, the diagnoses of CM were also confirmed, although 16 people were sent, the remaining 8 refused. Out of 8 - 3 children died after childbirth (2 from diaphragmatic hernia, 1 from CHD), 1 child with duodenal atresia was operated on with a positive result and 4 were discharged under observation (3 - with hydronephrosis of the kidneys and 1 - with cystic adenomatous lung disease).

Births in 2019 in the Bukhara region - 11,990, of which 117 were born with malformation. In 2020, 138 children were born with Congenital malformations.



Picture. 1 The frequency of occurrence of intrauterine developmental anomalies for 2018-2020 in Bukhara

In the structure of identified UA, malformations of the central nervous system - 20, malformations of the gastrointestinal tract - 11, malformations of the urinary system - 9, polyembryopathy - 7 are in the lead. In 2009, 48 CM were detected (25.8% of all CM), 24 were interrupted. In 2010, 76 CM were detected (39.3% of all CM), 43 were interrupted. that the detection of AVAI has improved, but

remains low. According to numerous foreign studies conducted in different years, their detection rate averages 45%. A Russian multicenter study showed a similar result - 55% [3]. There were 16 children who died at full term from CM, among them congenital heart defects (CM) are in the lead - in 10 children, in 4 children - CM of the digestive system (ileal atresia, atresia esophagus with tracheoesophageal fistula, intestinal rotation disorder with torsion and intestinal necrosis, duodenal atresia). Of the 76 malformations identified in 2010, AVAD - 5, and 4 of them were detected after 30 weeks, i.e. at a later date. And such a severe heart disease as Tetrado Fallot was not detected prenatally in any case. Therefore, congenital malformations remains in the first place in the structure of perinatal mortality of dead newborns due to congenital malformations. The reasons for the poor diagnosis of CM, obviously, are poor training in fetal echocardiography. In our region, polyclinics and ultrasound diagnostic rooms in many areas are equipped with Mindray devices - DP 9 900, made in China, manufactured in 2010. Often, the equipment is completed without taking into account the main area of \u200b\u200buse (for examining the fetus). For example, the absence of a 5 MHz sensor significantly affects the quality of the resulting image. The study of the heart in the second trimester showed that obtaining a high-quality image of a four-chamber heart using a 5 MHz transducer is achieved in 93.5% of cases, while the use of a 3.5 MHz transducer is achieved in 73.3% of cases [3]. CM detection is provided by the use of modern technologies: Doppler sonography, color Doppler mapping, cine-loop mode. In this regard, it is necessary to improve the detection of CM. Among the reasons for inadequate ultrasound diagnosis of fetal CM, the leading ones are:

- morally and technically obsolete fleet of ultrasonic equipment;

- insufficient qualification of doctors conducting echography;

- violation of the methodological foundations of prenatal echography;

- non-compliance with the terms of screening echography;

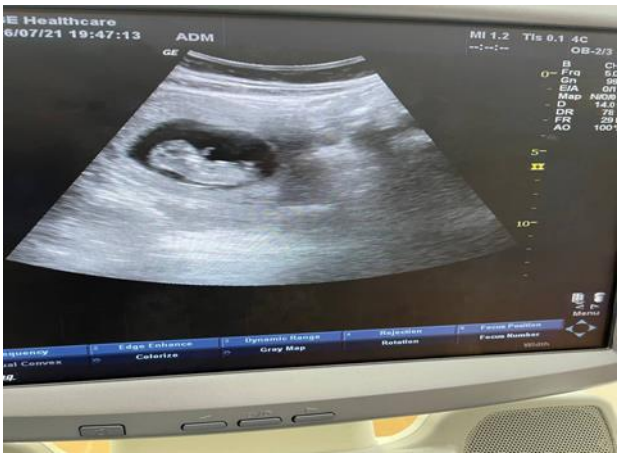
- Refusal to terminate pregnancy for religious and other reasons.

Ultrasound diagnostics. The first trimester is the period of formation of all organs and structures of the body. By the end of the first trimester, the embryonic period ends and the fetal period of fetal development begins. It is in the period from 11 weeks 1 day to 13 weeks 6 days of pregnancy that echographic markers of anomalies are best visualized.

At screening during pregnancy, fetometry of the fetus is performed - determination of the size of body parts and all anatomical structures are evaluated.

During an ultrasound examination in the 1st trimester, the following parameters are evaluated: the bones of the cranial vault and the brain, the spine, the anterior abdominal wall, the limbs of the fetus, the structures of the face, the organs of the chest and abdominal cavity, as well as the main echographic markers of chromosomal abnormalities.

The thickness of the collar space (TVP) - The area between the inner surface of the skin of the fetus and the outer surface of the soft tissues covering the cervical spine. TVP is considered the most important marker of anomalies.



Picture. 2 Patient A 1994 echo signs 10-11 weeks, fetal neck hygroma

This space begins to decrease after 13 weeks, so it can only be assessed at the first screening up to 13 weeks.

Table 3

Variability of TVP by timing in women with normal pregnancy

Term	**Collar thickness in mm, 5th percentile**	**50th percentile**	**95th percentile**
11 weeks	**0,8**	**1,6**	**2,4**
12 weeks	**0,7**	**1,6**	**2,5**
13 weeks	**0,7**	**1,7**	**2,7**

The inconsistency of the results with the normative values indicates an increased risk of developing intrauterine fetal anomalies.

Bones of the cranial vault and the brain - Already from the 11th week, ultrasound examination can detect defects in the bones of the skull, which indicates severe fetal malformations that are incompatible with life. The evaluation of the brain is based on the study of the so-called "butterfly" - the choroid plexus of the lateral ventricles. A clear visualization and its symmetry indicates the normal development of the brain.

Picture 3. Patient B, 12 weeks old, choroid plexus cyst of the brain.

Fetal heartbeat - When examining the heart, its location is assessed, the presence of four chambers of the heart is established - two atria and two ventricles, and their symmetry is assessed. The heart rate is measured. A heart rate of less than 110 in the early first trimester is also indicative of a risk of developing UA.

Conclusion. Thus, the reserve for the qualitative reduction of perinatal losses are the following measures:

- obligatory certification of doctors conducting ultrasound

diagnostics in obstetrics - admission to ultrasound in obstetrics of doctors who have undergone special training in perinatal echography;

- conducting a thematic improvement in fetal echocardiography;

- to improve the equipment of offices with high and expert class devices for perinatal echography;

- wide introduction in the region of modern technologies (Doppler sonography, color Doppler mapping) and invasive prenatal technologies;

- training of qualified personnel for the prenatal diagnostics service (training of II level specialists).

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