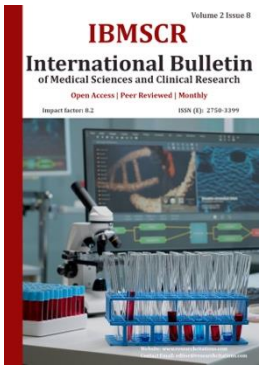

MACROSOMIA: MODERN ASPECTS OF THE PROBLEM

Zakirova Nodira Islamovna
Samarkand State Medical University Samarkand, Uzbekistan
Abdullaeva Nigora Erkinovna
Samarkand State Medical University Samarkand, Uzbekistan
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Abstract

Improving methods for early diagnosis of macrosomia of non-diabetic origin may allow timely identification of pregnant women from high-risk groups to determine the optimal method of delivery, provision of appropriate medical care, which will help reduce the incidence of macrosomia, select the optimal method of delivery, reduce perinatal morbidity and mortality and maternal injuries.

Key words: fetal macrosomia, pregnancy, delivery, perinatal outcomes, postnatal development.

Over the past decades, significant improvements have been achieved in the field of maternal and child health, but the problem of fetal macrosomia in obstetrics and neonatology does not lose its significance. Despite the large number of studies in this area, the issues of prevention, timely diagnosis, rational management of childbirth and the prevention of possible complications remain not fully resolved. High levels of maternal complications during childbirth, perinatal morbidity and mortality, caused by large fetal weight, determine the continued relevance of this issue.

The birth rate of large children averages 10-12%, while in different countries this frequency varies from 2% to 28% [10]. In recent decades, there has been an increase in the frequency of births of large children in many countries [6, 11, 18].

Pregnancy with a large fetal mass is characterized by a high incidence of hypertensive disorders and anemia [7]. Edema of pregnant women in the 3rd trimester in mothers of large fetuses is observed 5 times more often, and preeclampsia of varying degrees is 12- 15 times more often compared with the normosomia group [10]. In the presence of maternal overweight and macrosomia, compared with normal maternal weight, the risk of preeclampsia increases by another 3 times [14].

Pregnancy with a large fetus is often accompanied by polyhydramnios, which is 3-6 times more common compared to pregnancy with a medium-sized fetus [3, 4]. A number of studies have noted the presence of chronic intrauterine fetal hypoxia with macrosomia [4, 5]

A number of authors indicate the absence of statistically significant differences in the total duration of labor, regardless of fetal weight and parity [3,13]. Other researchers emphasize a significant prolongation of the first and second periods during childbirth with a large fetus, especially during the first birth [1, 2].

Post-term pregnancy is one of the most common indications for induction of labor with macrosomia. However, there is evidence showing that the use of induction of labor increases the risk of cesarean section in women with large fetuses by 7 times [17]. Childbirth with a large fetus due to overstretching of the uterus, impaired contractility of the myometrium and the occurrence of disproportion of the head is often complicated by primary and secondary

weakness of labor forces; Rodostimulation for macrosomia is carried out 3 times more often [9]. The lack of timely diagnosis of a functionally narrow pelvis contributes to a weakening of the contractile activity of the uterus and the occurrence of decelerations, which leads to an unfavorable birth outcome in large children [6].

One of the most difficult questions is the need for surgical delivery. A planned cesarean section is performed in pregnant women with a large fetus when it is combined with such unfavorable factors as breech presentation, uterine scar, anatomically narrow pelvis, post-maturity, chronic intrauterine fetal hypoxia, severe forms of gestosis and extragenital pathology [16]. The most common indications for emergency cesarean section are weakness of labor and a clinically narrow pelvis [13]. In general, in mothers of large newborns, the rate of birth by cesarean section is significantly higher and reaches 52% [9].

Shoulder dystocia with a large fetus increases the risk of clavicle fracture, Erb-Duchenne palsy, and damage to the central nervous system [8, 13]. The frequency of shoulder dystocia, according to various authors, is 0.4-3% of the total number of births, with macrosomia in general - 10.5% and increases significantly with fetal weight >4500 g, reaching 27% [3 ,5]. The risk of shoulder dystocia with a fetal weight of more than 4500 g is 5-8 times higher than with an average weight [1, 3]. However, with macrosomia of non-diabetic origin it is lower, since most of these fetuses are developed proportionally [14].

The intrapartum period with a large fetus is characterized by a high incidence of trauma to the birth canal, which reaches 30% [7]. The risk of 3-4 degree perineal ruptures during childbirth with a large fetus increases 3-4 times [15].

When examining the placenta, there is a higher weight and volume of the placenta. With a large fetus, placenta weight less than 600 g is observed 3.9 times less often than with a fetus with normal body weight [3, 11].

A number of authors note an increase in the frequency of complicated postpartum period up to 45.4% in women who gave birth to large newborns [10, 12, 18]. Postpartum hemorrhage with macrosomia occurs 1.7-2.3 times more often After delivery of a large fetus, the likelihood of anemia is higher and the average hemoglobin level is lower [10]. Overdistension of the uterus with a large fetus is one of the leading factors of its subinvolution in the postpartum period [9, 12]. Childbirth with a large fetus often contributes to the occurrence of urinary disorders; such women subsequently need rehabilitation of the function of the lower urinary tract [2]

Of particular concern are the high morbidity and mortality rates and subsequent development of newborns with macrosomia. According to a number of researchers, the perinatal morbidity of children born large is significantly higher than those with average weight indicators; they have a lower Apgar score [4, 13, 30]. About half of newborns weighing 4000-4499 g have at least one pathological condition after birth; with an increase in the weight of children over 4500 g, this figure reaches 71.4% [17].

The most common pathologies of the perinatal period are birth injuries and damage to the central nervous system [4, 6, 7]. The larger the newborn, the greater the number of children born in a state of asphyxia, the number of clavicle fractures and the likelihood of neurological disorders [10, 17].

It is also important that macrosomia serves as a predetermining factor in the development of other diseases and pathological conditions in newborns in the early neonatal period, such as hypoglycemia, polycythemia, meconium aspiration, respiratory distress syndrome,

hyperbilirubinemia [4]. Postnatal mortality in large newborns is several times higher than in children with average body weight [35]. A recent study found that macrosomia increases the risk of sudden infant death syndrome by more than 10-fold [8, 15].

An important factor influencing perinatal outcomes is dynamic prenatal monitoring of pregnant women at risk. Numerous studies confirm the high incidence of excess body weight and endocrine pathology in such children in the future, including diabetes mellitus [19]. In addition, large children may subsequently experience high blood pressure, neurological and mental disorders, difficulties in learning at school, as well as deviations in physical development [20].

Fetal macrosomia today remains a pressing problem in modern obstetrics and perinatology. Pregnancy with a large fetus is often accompanied by hypertensive and endocrine disorders, polyhydramnios, and the presence of intrauterine chronic fetal hypoxia. Childbirth due to hyperextension of the uterus, impaired contractility of the myometrium and the occurrence of disproportion of the head is often complicated by primary and secondary weakness of labor forces, which often requires surgical delivery. The high frequency of injuries to the birth canal and the increased frequency of complicated postpartum period, high levels of perinatal morbidity and mortality are also serious problems that require close attention of obstetricians-gynecologists and neonatologists.

The increasing frequency of births of large children, insufficient information content of diagnostic methods, and the high frequency of maternal and neonatal complications dictate the need for further in-depth study of this problem.

Improving methods for early diagnosis of macrosomia of non-diabetic origin may allow timely identification of pregnant women from high-risk groups to determine the optimal method of delivery, provision of appropriate medical care, which will help reduce the incidence of macrosomia, select the optimal method of delivery, reduce perinatal morbidity and mortality and maternal injuries.

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