

THE EFFECT OF OLIGOHYDRAMNIOS DURING PREGNANCY ON THE COURSE OF LABOR AND THE CONDITION OF NEWBORNS

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Annotation. *This study examines the influence of oligohydramnios on the course of labor and the condition of newborns. Particular attention is given to the duration and progression of labor, fetal heart rate changes, labor induction, operative delivery, and other intrapartum characteristics associated with reduced amniotic fluid. The study also evaluates neonatal outcomes, including birth weight, Apgar score, early adaptation, and the need for additional neonatal observation. The findings emphasize that the clinical effect of oligohydramnios may vary depending on gestational age, severity of amniotic fluid reduction, fetal growth, placental function, and the quality of antenatal and intrapartum monitoring. Comprehensive maternal and fetal assessment can contribute to timely recognition of complications and appropriate obstetric management. Evaluation of neonatal condition after delivery provides additional information about the possible perinatal consequences of oligohydramnios.*

Keywords: *Oligohydramnios, labor progression, intrapartum complications, fetal distress, labor induction, mode of delivery, neonatal condition, Apgar score.*

Introduction

Oligohydramnios is an important obstetric condition characterized by a reduced volume of amniotic fluid and may influence both the course of labor and the condition of the newborn.

Adequate amniotic fluid contributes to fetal movement and provides protection of the umbilical cord, while its reduction may increase the possibility of cord compression and intrapartum fetal heart rate abnormalities.

Clinical studies have reported higher frequencies of labor induction, cesarean delivery, and certain short-term neonatal complications among pregnancies complicated by oligohydramnios, although outcomes may vary depending on gestational age, severity of the condition, and the presence of additional maternal or fetal risk factors.

Recent research also indicates that the severity of oligohydramnios may be relevant to prognosis, with more severe cases demonstrating a higher frequency of adverse perinatal outcomes than mild cases.

Therefore, the presence of oligohydramnios requires careful assessment of fetal condition before and during labor, with attention to the expected course of delivery and the possible need for additional neonatal observation after birth.

Evaluation of these relationships is clinically important for understanding how reduced amniotic fluid may affect obstetric management and early neonatal adaptation.

Relevance

The relevance of studying oligohydramnios in relation to the course of labor and neonatal condition is determined by its potential association with changes in intrapartum management and short-term neonatal outcomes. Evidence from previous studies demonstrates that pregnancies with oligohydramnios may have higher rates of labor induction and cesarean delivery, particularly when fetal monitoring becomes non-reassuring.

Main part

Oligohydramnios may influence the physiological progression of labor because a reduced volume of amniotic fluid changes the intrauterine environment surrounding the fetus. During labor, insufficient fluid may increase the possibility of umbilical cord compression, which can lead to transient or persistent changes in fetal heart rate. In some patients, these changes may complicate the normal progression of labor and require closer intrapartum monitoring.

Oligohydramnios may also be associated with an increased need for labor induction when the risks of continuing pregnancy are considered greater than the potential benefits of expectant management. Once labor begins, assessment of cervical dilatation, uterine contractions, fetal position, and fetal heart activity becomes particularly important. The duration of the active phase and the frequency of prolonged labor should also be considered when evaluating the influence of reduced amniotic fluid.

Meconium-stained amniotic fluid may occur more frequently in some pregnancies with oligohydramnios and may require additional attention during delivery. However, the presence of oligohydramnios does not necessarily lead to abnormal labor in every patient. The clinical course depends on gestational age, severity of fluid reduction, fetal condition, placental function, and associated maternal disorders. Therefore, assessment of labor should focus not only on the presence of oligohydramnios but also on the overall maternal and fetal condition.

The mode of delivery in pregnancies complicated by oligohydramnios is determined by the interaction of maternal, fetal, and obstetric factors. Reduced amniotic fluid may increase concern regarding fetal tolerance of labor, particularly when cardiotocographic monitoring demonstrates non-reassuring fetal heart rate patterns. Continuous or repeated fetal assessment may therefore become necessary during labor in order to detect signs of fetal compromise at an early stage. In some cases, induction of labor can be performed when the pregnancy has reached an appropriate gestational age and the maternal-fetal condition supports delivery. In other situations, operative delivery may be considered when fetal distress persists or when labor does not progress adequately. Cesarean delivery should not be regarded as an inevitable consequence of oligohydramnios, because many women with isolated oligohydramnios can deliver vaginally without major complications. The decision regarding delivery method should be individualized and based on fetal monitoring, cervical conditions, gestational age, estimated fetal growth, and maternal status. Intrapartum fetal distress is particularly important because reduced amniotic fluid may limit the protective space around the umbilical cord and increase the possibility of compression during uterine contractions. Meconium passage may also require additional neonatal preparedness because of the potential need for immediate assessment after birth. Consequently, oligohydramnios requires careful intrapartum observation rather than automatic selection of operative delivery.

Appropriate interpretation of fetal monitoring and timely recognition of clinically significant abnormalities remain central to reducing avoidable maternal and neonatal complications.

The condition of the newborn after delivery represents an important indicator of the clinical significance of oligohydramnios during pregnancy and labor. Newborn assessment should include birth weight, Apgar score, respiratory adaptation, general activity, and the need for additional medical observation. In some pregnancies, oligohydramnios may coexist with fetal growth restriction, which can result in lower birth weight and a greater need for neonatal monitoring. The neonatal condition may also be influenced by the way labor progresses and by the presence of fetal distress before or during delivery. Infants born following complicated labor may require more careful assessment immediately after birth, particularly when abnormal fetal heart rate patterns or meconium-stained fluid were present.

Nevertheless, oligohydramnios does not inevitably result in poor neonatal adaptation, and many newborns demonstrate satisfactory clinical condition despite reduced amniotic fluid. The final neonatal outcome depends on the severity and duration of oligohydramnios, gestational age at delivery, fetal growth, placental function, and the effectiveness of antenatal and intrapartum surveillance. Evaluation of Apgar scores at one and five minutes provides a simple measure of early adaptation, while additional observation may be required in newborns with respiratory difficulties, low birth weight, or signs of fetal compromise. Comparing neonatal outcomes between pregnancies with different degrees of oligohydramnios may help clarify the clinical significance of the condition.

Conclusion

Oligohydramnios can influence the course of labor and the early condition of the newborn, particularly when reduced amniotic fluid is accompanied by fetal growth abnormalities or signs of fetal compromise. The main clinical concerns during labor include umbilical cord compression, non-reassuring fetal heart rate patterns, prolonged labor, meconium-stained amniotic fluid, and an increased need for obstetric intervention in selected cases. At the same time, oligohydramnios does not inevitably result in operative delivery or poor neonatal adaptation.

The outcome largely depends on gestational age, severity and duration of amniotic fluid reduction, fetal growth, placental function, and the quality of antenatal and intrapartum monitoring. Assessment of the newborn using birth weight, Apgar score, respiratory adaptation, and the need for additional neonatal care provides important information about the consequences of oligohydramnios.

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