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# A prospective study of fetal outcome in a case of oligohydramnios after 34 weeks of pregnancy at tertiary care centre of South Gujarat, Surat

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**Abstract**
Amniotic fluid surrounding the fetus is an important biophysical marker of fetal wellbeing. Quantification of amniotic fluid is an important component of the biophysical profile in USG evaluation of fetal well-being at term. Oligohydramnios is define as AFI <5 cm, AF assessment at 37-42 gestational weeks. Study was directed to watch the effect of oligohydramnios in perinatal morbidities and mortality and maternal outcome in form of mode of delivery after 34 weeks of gestation. The rate of LSCS was 55%. 52% had low birth weight, 32% were premature. Out of all patients 8% had transient tachypnea of newborn, 7% had meconium aspiration syndrome, 6% had respiratory distress syndrome, 5% had sepsis. NICU admissions were 52% and no perinatal deaths. The present study recommends that pregnant patients diagnosed with oligohydramnios are at a higher risk of C/S and NICU admission.

**Keywords:** Oligohydramnios, amniotic fluid index, perinatal outcome

## Introduction
Amniotic fluid is an important part of pregnancy which plays a vital role in the normal growth of fetus and promotes muscular skeletal development and allows for easier fetal movement.
Modern obstetrics is concerned with health and well-being of both mother and the unborn child. Recognition of fetus at risk for death or damage in utero, balancing the fetal risk against the risk of neonatal complications from immaturity, and determining the optimal time and mode of intervention are cornerstones.
Amniotic fluid assessment is an essential part of evaluation of fetus health in terms of fetal distress, meconium aspiration, caesarean and fetal mortality. The assessment of amniotic fluid volume is very crucial for the survival of the fetus and Amniotic Fluid Index (AFI) is the most common way for the estimation of amniotic fluid volume which is performed by ultrasound method. The incidence of oligohydramnios is 1-2% of all the pregnancies [1]. Oligohydramnios refers by the sonographic diagnosis which usually based on an AFI < 5 cm or a single deepest pocket of amnionic fluid below 2 cm [2].
Pregnancies with oligohydramnios have shown outcome such as immediate caesarean delivery, meconium aspiration, non-reactive non-stress tests, fetal heart rate (FHR) deceleration, LBW, NICU admission and SGA in comparison with control subject with normal amniotic fluid level. Also the low amniotic index may increase the operative delivery rate.[3]Oligohydramnios can be associated with fetal congenital anomalies and IUGR, it is usually proportionate to degree of IUGR and it indicates placental dysfunction. Oligohydramnios can also cause asymmetrical fetal growth, contracture of joints and hypoplasia of fetal lungs by decreasing the lung expansion due to compression of the fetal abdomen which limits the movements of the fetal diaphragm and decrease the flow of amniotic fluid into and out of fetal lung. It is also associated with IUGR, cord compression, poor tolerance of the labor by the fetus, low APGAR scores with a poor perinatal outcome [4].

## Aims & objectives
Study was directed to watch result of work in type of perinatal morbidities and mortality.

## Materials and methods
This study was carried out in the Department of Obstetrics and Gynaecology at Government Medical College, Surat over a period of 24 months from October 2018 to September 2020.

100 consenting pregnant women who had presented to our department in OPD or Labour room for antenatal care after 34 weeks of gestation and diagnosed with oligohydramnios with AFI ≤5 cm were enrolled in this study.
Outcome was observed in terms of type of delivery, low birth weight, prematurity and NICU admissions and neonatal mortality.

**Inclusion Criteria**
- All consenting pregnant woman having diagnosed with oligohydramnios after 34weeks of gestation.

**Exclusion Criteria**
- Gestational age of less than 34 weeks
- Multifetal gestation
- Fetal congenital anomalies and IUFD
- PROM
- Not consenting for study

**Results**
100 consenting pregnant women who had presented to our department in OPD or Labour room for antenatal care after 34 weeks of gestation and diagnosed with oligohydramnios with AFI ≤5 cm were enrolled in this study.
Outcome was observed in terms of AFI, type of delivery, low birth weight, prematurity and NICU admissions.

**Table 1:** Gestational age distribution

| | Number (n=100) | Percentage (%) |
|---|---|---|
| 34-37 weeks | 32 | 32% |
| 37-40 weeks | 58 | 58% |
| 40-42 weeks | 10 | 10% |
| >42 weeks | 0 | 0% |

In present study, most of patient presented after term pregnancy (68%), the incidents of preterm pregnancy was (32%), while no patient was presented after 42 weeks of gestation.

**Table 2:** Distribution according to AFI

| | Number (n=100) | Percentage (%) |
|---|---|---|
| 0-1 | 15 | 15% |
| 1-2 | 23 | 23% |
| 2-3 | 21 | 21% |
| 3-4 | 26 | 26% |
| 4-5 | 15 | 15% |

In present study, most of patient had AFI between 1-4cm (70%) while 15% patient had AFI of 0-1cm. Mean AFI in my study was 2.06cm.

**Table 3:** Mode of delivery

| | Number (n=100) | Percentage (%) |
|---|---|---|
| Vaginal | 45 | 45% |
| LSCS | 55 | 55% |
| Instrumental | 0 | 0% |

Out of 100 delivery of oligohydramnios patients, 45% had vaginal and 55% had LSCS. This shows that incidence of LSCS is higher in patients having oligohydramnios (55%). Compare to our annual department LSCS rate in 2019-31.85%.

**Table 4:** Birth weight

| | Number (n=100) | Percentage (%) |
|---|---|---|
| < 1.5 Kg | 2 | 2% |
| 1.5-2.5 Kg | 50 | 50% |
| 2.6-3.5 Kg | 47 | 47% |
| >3.5 Kg | 1 | 1% |

In present study, the incidence of LBW was 52%, 2.48kg was mean birth weight.

**Table 5:** Admission to NICU

| | Number (n=100) | Percentage (%) |
|---|---|---|
| NICU admission | 52 | 52% |
| No admission | 48 | 48% |

Out of 100 delivery of oligohydramnios patients, 52% required NICU admission and remaining 48% do not required NICU admission. The rate of NICU admission was higher in our department (2019- 34%) compare with present study.

**Table 6:** Neonatal complications

| Complications | Number | Percentage (%) |
|---|---|---|
| Low birth weight | 52 | 52% |
| Prematurity | 32 | 32% |
| Transient tachypnea of Newborn | 8 | 8% |
| Meconium aspiration syndrome | 7 | 7% |
| Respiratory distress syndrome | 6 | 6% |
| Sepsis | 5 | 5% |
| Jaundice | 2 | 2% |
| Hypoglycemia | 1 | 1% |
| Early neonate death | 0 | 0% |

In present study, most common neonatal complications are Low birth weight (52%) and prematurity (32%).In others, 8% had Transient tachypnea of newborn, Meconium aspiration syndrome in 7%, Respiratory distress syndrome (6%), sepsis (5%), and less common complications were jaundice (2%) and hypoglycemia (1%) and out of them, more than half were associated with low birth weight and prematurity. There was no early neonatal death reported in this study.

**Discussion**
Oligohydramnios is associated with high perinatal morbidity and mortality. Ultrasonography proved to be an important tool for early and accurate diagnosis of oligohydramnios. Amniotic fluid index measurement is useful indicator for fetal surveillance and to identify those neonates at risk for poor perinatal outcome.
In Dr Amit S *et al.* [5] study to evaluate the effect of Oligohydramnios on the obstetric and perinatal outcome in 74 antenatal patients between 20-42 weeks gestational age diagnosed to have oligohydramnios on ultrasonography. LSCS (55.40%) was higher than the vaginal delivery (39.19%). 35.13% of neonates were needed NICU admission.
The occurrence of low birth weight was 52% which is comparable with other Indian studies. Chandra P *et al.* [6] had 61.53% and Sriya R *et al.* [7] had 58.38%. The higher incidence of low birth weight might be because of chronic placental insufficiency causing fetal growth restriction.
In Chandra P *et al.* study 46.15% of neonates were required NICU admission. And in Sriya R *et al.* study 88.88% neonates required NICU admission.
Out of 55 patients of oligohydramnios delivery in Monir F *et al.* [8] study 55% neonates required NICU admission. 65.5% neonates had low birth weight, 21% had meconium aspiration syndrome and 13% had respiratory distress syndrome. In Chauhan SP *et al.* [9] study 9% neonates had respiratory distress syndrome.

**Conclusion**
Oligohydramnios is having frequent occurrence and demands intensive fetal surveillance and proper antepartum and

intrapartum care. Due to intrapartum complication and high rate of perinatal morbidity and mortality, timely intervention isrequired to reduce perinatal morbidity and mortality.

Considering the observation of the present study, it is suggested that antepartum evaluation of amniotic fluid volume can be useful in reducing perinatal mortality and morbidity and improving pregnancy outcome.

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