



## STUDY OF ETIOLOGY AND PERINATAL OUTCOME IN OLIGOHYDRAMNIOS

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**ABSTRACT****Aims and Objectives:** The aim of the study is to determine the cause of Oligohydramnios and its effect on the outcome of pregnancy and neonate.

A detailed analysis of 100 cases during the period of 15 months from July 2018 to September 2019 was undertaken at Government General Hospital, Guntur, to evaluate the

1. Etiology
2. Gestational age at which Oligohydramnios is diagnosed.
3. Mode of delivery
4. Outcome of pregnancy – Maternal & Fetal as per the severity and etiology.

**Materials and Methods:** Material for the study comprised patients with oligohydramnios during the period July, 2018 to September 2019 being diagnosed after 28th weeks of gestation. It is a prospective study. Patients admitted both on an emergency basis, booked and unbooked and referral cases who were willing to co-operate were chosen.**Observation and Results:** Total 100 cases of oligohydramnios were followed up and studied in Government General Hospital Guntur.

The mean maternal age was 21 years with a maximum incidence of 82% found in the group of 20-25 years.

Primigravidae were more affected 56% when compared to multigravidae.

50% of women had no antenatal care.

44% of women had gestational age between 38-40 weeks.

20% had abnormal presentation i.e. breech.

2% - Transverse lie.

Pregnancy induced hypertension was encountered in 32% of cases of which 20% had

Severe preeclampsia

Intrauterine growth restriction was seen in 34% of cases.

40% were preterm babies.

Patients with severe oligohydramnios, with low Bishop's score and other associated complications like preeclampsia, IUGR, Low Biophysical Profile and abnormal Doppler velocimetry were decided for abdominal delivery.

A staggering 84% of patients were taken up for caesarean section.

The incidence of perinatal mortality was 18%. 68% of neonates required admission into neonatal intensive care unit. In our study it was found that neonatal mortality and morbidity increased in &lt; 34 wks gestational age group because of associated intrauterine growth restriction, preterm, LBW and Preeclampsia in the mother.

**Conclusion:** This study was undertaken to evaluate the causes of oligohydramnios and its effect on perinatal outcome. Preeclampsia, IUGR were the major etiological causes of oligohydramnios and oligohydramnios associated with unfavorable maternal and fetal conditions leads to much worse perinatal outcome. This is more often in those with oligohydramnios diagnosed before 34 wks of gestation. Isolated oligohydramnios is not associated with adverse perinatal outcome.**KEYWORDS :** Oligohydramnios, preeclampsia, IUGR, LBW, perinatal mortality, amniotic fluid volume.**INTRODUCTION**

Oligohydramnios or a reduced volume of amniotic fluid poses a challenge in obstetric management, particularly when it is diagnosed before term. It is one of the major causes for antenatal fetal surveillance and induction of labour.

**Definition<sup>1</sup>:**

- Oligohydramnios describes the condition in which the AFV is decreased relative to gestational age.
- Quantitatively oligohydramnios is defined as AFV < 300 to 500 ml after the mid trimester.
- Subjectively oligohydramnios is described by an obvious lack of fluid, poor fluid-fetal interface and marked crowding of fetal parts.
- Semi quantitatively it is described by a Mean Vertical Pocket (MVP) < 1-2 cms, a two diameter pocket of less than 15 cm<sup>2</sup> and AFI less than 5 cm.
- Controversy exists as to the semi quantitative threshold that should be held to defer oligohydramnios. Although most examiners use an AFI of 5 cm as the threshold many use 5%

**MATERIALS AND METHODS**

A detailed analysis was made with regard to age and parity, number of antenatal checkups, and Ultrasonographic findings. Detailed history was taken. Both preliminary and specific investigations were done which included biophysical profile and Doppler flow studies in

specified cases.

ESOATE-B mode real time colour Doppler with curvilinear probe is used in our hospital. The Nomograms for abnormal Doppler velocimetry were taken from study conducted at Government General Hospital, Guntur, in the year 2018 and 2019.

**RESULTS****Maternal age and Incidence of oligohydramnios**

Mean maternal age in pregnancies complicated by oligohydramnios was 21 years and range was between 20-25 years. The highest incidence was found in the age group 20-25 i.e. 82%.

**Gravidity**

Among 100 cases of oligohydramnios 56 were primigravida accounting for 56%. 34 were second gravida.

**Gestational age At Presentation**

The highest number of cases were between 38-40 weeks of gestation i.e. 44%. Past dated pregnancies accounted to 16%. Preterm fetuses accounted for 40%.

**AFI at admission in the study group**

Mild oligohydramnios cases were 66 (66%) with AFI 4-5, Moderate oligohydramnios cases accounted 28% and 6% were severe oligohydramnios.

### Incidence of Breech Presentation in Oligohydramnios

There was increased incidence of breech presentation amounting to 20% in the study group as compared to normal incidence 3.5% of breech. 8 out of 20 were term breech, 12 were pre term breech.

### Etiological Causes for Oligohydramnios

Causes	No. of cases	Percentage
PREECLAMPSIA	32	32%
a). Preeclampsia + IUGR	28	
b) Preeclampsia without IUGR	4	
UTEROPLACENTAL INSUFFICIENCY (other than Preeclampsia)	10	10%
a. with IUGR	6	
* Sickle cell anemia	2	
* Hypothyroidism	4	
b. without IUGR	4	
* Heart Disease	2	
* Chronic HTN	2	
PPROM	8	8%
PROM	2	2%
Past dates	16	16%
Idiopathic	28	28%
Cong. Anomalies	4	4%
Total	100	100%

In our study most common cause was Preeclampsia 32% (1/3 of cases). Out of 32 Preeclampsia cases, 28 had IUGR. Overall IUGR was seen in 34 cases i.e. 34%. PROM & PPRM seen in 4% and 8% respectively. Congenital Anomalies accounted 4%. In all the 4 cases severe oligohydramnios was seen. Two had multiple congenital Anomalies (Renal, Cardiac, GIT) at 28 wks GA with still births. other two fetuses had isolated cardiac anomaly which survived. Idiopathic oligohydramnios was seen in 28% of cases.

Patients were advised bed rest in left lateral position and IV fluids were given and were advised to note the fetal movements.

### Foetal Biophysical Score

ABPP score of 8/10 was noted in 62 cases with AFI<5. ABPP score of 6/10 was noted in 18 cases with AFI<5.

### USG Doppler Velocimetry

Doppler was considered as abnormal when umbilical artery pulsatility index is >1, resistance index is >0.65, systolic/diastolic ratio is >3.

Abnormal Doppler velocimetry was noted in 20 out of the 100 cases accounting to 20%. All these patients with abnormal Doppler flow studies had Preeclampsia & IUGR.

Patients with AFI<5, Preeclampsia, IUGR, abnormal Doppler flow, low biophysical profile score, unfavorable cervix and Low Bishop's score were decided for abdominal delivery.

### Mode of Delivery

Majority of cases (84 cases) delivered by LSCS (84%). Of them 80% were emergency (68 cases). 16 cases had vaginal delivery in which 8 cases had Induction of Labour (4 cases had severe oligohydramnios, severe IUGR, abnormal Doppler and EFW < 900 grs, 2 cases IUD, 2 cases Abruptio placenta) & 8 had spontaneous labour.

### Findings at the time of delivery

Meconium staining of liquor was seen in 40% of cases. Blood stained liquor due to Abruptio was seen in 2 cases.

### PERINATAL OUTCOME

#### 1. APGAR Score

74% babies had good Apgar (8-10). 72 babies had low Apgar.

#### 2. Birth weight

Low birth weight babies (<2.5 kg) were 54 out of 100 that is 54%.

The birth weight of babies ranged between 700 gm – 3.5 kg and the gestational age ranged from 28-41 weeks. In 2.5 – 3 kgs group 38% babies were seen and 8% babies had birth weight >3 kgs

#### 3. Number of New born cases admitted to NICU and Duration of stay

Out of the 100 cases of oligohydramnios studied, there was a high

incidence of cases with low birth weight and intra uterine growth restriction which needed admission to neonatal intensive care unit amounting to 68%.

### 4. Morbidity

There is an increased neonatal morbidity because of high incidence of LBW, Preterm and IUGR and also because of Preeclampsia in the mother and this was the reason for the greater number newborn babies needing admission to neonatal care unit.

### 5. Perinatal Mortality

There were 40 pre term deliveries and 16 of the preterm IUGR babies died. Of the 60 term deliveries, 6 were IUGR babies and two of them died.

Perinatal Mortality in oligohydramnios cases at our hospital was 18%, (18/100 cases) of which 6 had birth weight <1 kg, 8 cases were >2 kgs but 2 babies died of birth asphyxia, 2 babies died of septicemia, 2 babies died of meconium aspiration syndrome, 2 were IUD, 2 were still born and 2 had multiple congenital anomalies.

### Perinatal outcome in isolated Oligohydramnios

Isolated oligohydramnios had good perinatal outcomes. In our study there were 28 cases of isolated (idiopathic) Oligohydramnios all had gone to term gestation. 24 cases had AFI 5 and 4 cases had AFI 4. 12 cases underwent emergency caesarean section for fetal distress during spontaneous labour, but only 4 had meconium stained liquor. All except two had Apgar score >7. 26 out of 28 cases had birth weight >2.5 kgs. 6 cases were kept in NICU for observation <1 day. Only two babies had respiratory distress and were in NICU for 4 days.

### DISCUSSION

Assessment of amniotic fluid has become an integral component of antepartum assessment of fetal well being. This is based on the rationale that decreased utero placental perfusion may lead to decreased fetal urine production and ultimately to oligohydramnios.

A decreased amniotic fluid volume is frequently one of the first clues to an underlying fetal abnormality or maternal disease state. Although oligohydramnios may not be associated with a fetal malformation, a significant reduction of amniotic fluid correlates with increased rate of both perinatal morbidity and mortality. Appreciation of the importance of amniotic fluid volume as an indicator of fetal status is a relatively recent development.

This study was under taken to evaluate the causes of oligohydramnios and its effect on perinatal outcome.

All patients were thoroughly evaluated. History was taken and a thorough clinical and obstetrical examination was done.

Ultrasonography, Biophysical profile and Doppler velocimetry were done. Estimation of amount of liquor is important in the antepartum period because oligohydramnios gives an insight into the associated maternal complication or fetal anomaly and has a significant bearing on the perinatal outcome.

Although finding of oligohydramnios on ultrasound should prompt further evaluation to exclude fetal growth restriction and other causes of impaired uteroplacental circulation, and conform fetal well being, it should also be remembered that it may be a transient phenomenon in many cases detected incidentally. Therefore, it is imperative to identify the fetus at risk with oligohydramnios, which will also depend to some extent on the severity of oligohydramnios and the gestation at which it occurs.

The mainstay of management of oligohydramnios in utero is to provide intensively fetal surveillance in those at risk and deliver them by the safest means when fetal compromise is evident.

### SUMMARY AND CONCLUSION

This study was done to evaluate the aetiology of oligohydramnios. Preeclampsia, IUGR were the major etiological causes of oligohydramnios and oligohydramnios associated with unfavourable maternal and foetal conditions leads to much worse perinatal outcome. This is more often in those with oligohydramnios diagnosed before 34wks of gestation. Isolated oligohydramnios is not associated with adverse perinatal outcome.

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