

# Pregnancy Outcomes in Isolated Oligohydramnios during Second Trimester: A Case Series

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## ABSTRACT

Oligohydramnios is associated with increased maternal and foetal morbidities. However, some of the recent studies have shown no adverse effect of isolated oligohydramnios on perinatal outcome and recommends continuation of pregnancy. Pregnancies between 18-28 weeks with isolated Oligohydramnios were included. History and physical examination was recorded in a pre-designed proforma. All the cases received care as per the protocol. A total of seven patients were recruited of which one was a twin pregnancy with Oligohydramnios in both sacs. The mean age at presentation was 30 years. Three patients went into spontaneous expulsion at an average gestational age of 22-24 weeks. One patient with twins delivered vaginally at 32 weeks. Rest were delivered by caesarean section between 34-35 weeks (indication in majority of the cases was foetal distress and cord compression). None of the babies suffered any complication and were discharged in good condition. Isolated oligohydramnios during second trimester does not increase adverse perinatal outcome significantly (but increases the caesarean section rate) and therefore, should not be an indication for termination of pregnancy.

**Keywords:** Caesarean, Morbidity, Mortality, Newborn

Oligohydramnios is associated with risk of maternal and foetal morbidities. The risk is secondary to umbilical cord compression and potential utero-placental insufficiency. Therefore, termination of pregnancy is advocated sometime even in otherwise uncomplicated pregnancies with Oligohydramnios. However, some of the recent studies have shown no adverse effect of isolated oligohydramnios on perinatal outcome and recommends continuation of pregnancy.

## CASE SERIES

The present study was carried out in the Department of Obstetrics and Gynaecology at Dayanand Medical College and Hospital, Ludhiana, Punjab, India, with comprehensive services at tertiary level from December 2015 to June 2016. All pregnancies singleton or multifoetal were recruited between 18-28 weeks with isolated Oligohydramnios (as defined previously by Moore TR et al., the 5<sup>th</sup> centile value for AFI was taken as 7.9 cm at 16 weeks and 6.3 cm at 40 weeks' gestation) from the labour room [1]. Patients with ruptured amniotic membranes, foetus having congenital anomalies and high risk pregnancies (placental insufficiency-chronic hypertension, pre-eclampsia, diabetes, chronic renal diseases, connective tissue disorders, maternal infections including vulvo-vaginitis, placental abruption, on prostaglandin synthetase inhibitors therapy) were excluded.

A careful history was taken and a thorough physical examination was done. It was recorded in a pre designed proforma by taking the variables for the objective of the study. Informed consent was taken regarding the complications, the need of termination in case of complications, attempt to prolong pregnancy till 34 weeks in view of better foetal outcome and need for frequent admissions for maternal and foetal evaluation at periodic intervals.

Appropriate investigations like haemogram, urine culture and sensitivity, swabs from urethra, cervix wherever indicated, C-reactive protein, TORCH IgM and IgG, Ultrasound for foetal wellbeing to rule out congenital anomalies was done. Antenatal care and individualized medical treatment in the form of antibiotics, aminoacid supplementation (oral and parenteral) and antenatal corticosteroids was given. They were followed with weekly cultures and 2-3 weekly ultrasounds for foetal wellbeing. Plan was to terminate at 34 weeks or any complications like foetal distress (according to individualized cases) if occurs. All cases were monitored by continuous electronic foetal monitoring during labour. Mode and timing of delivery was recorded. All deliveries were attended by the neonatologist. The

birth weight and Apgar score at 1 and 5 minutes were noted. If the Apgar score was low or the baby had respiratory distress, the baby was admitted to the Neonatal Intensive Care Unit (NICU) and managed accordingly. Babies were kept in NICU till they fulfilled the criteria for discharge. The database was mounted in the Excel program and the statistical analysis was performed with SPSS (Version 16.0., Chicago, SPSS Inc.). Only descriptive statistics was used considering the study design.

A total of seven patients were recruited of which one was a twin pregnancy with Oligohydramnios in both sacs. The mean age at presentation was 30 years. Three of seven patients went into spontaneous expulsion at average gestational age of 22-24 weeks. One patient with twins delivered vaginally at 32 weeks. Rest were delivered by caesarean section between 34-35 weeks. Indication of caesarean section in majority of the cases was foetal distress and cord compression. Average birth weight of the babies was 1.5-2.0 kg. No baby was Intrauterine Growth Restricted (IUGR). All required NICU admission. Average stay at NICU was 2-3 days. Two neonates developed asymptomatic hypoglycaemia and one baby developed symptomatic hypocalcemia, were treated and discharged in good condition. The maternal and neonatal details have been provided in [Table/Fig-1,2].

## DISCUSSION

Around 0.5-5% of all pregnancies are complicated by Oligohydramnios, the prevalence being dependent upon the definition used and the population studied [2]. Though, the cause of oligohydramnios is largely undetermined; ruptured membranes, genetic and chromosomal abnormalities leading to congenital anomalies and placental insufficiency are the common causes.

Oligohydramnios is associated with increased maternal and foetal morbidities. The perinatal morbidity and mortality is due to foetal distress, low APGAR scores and meconium aspiration syndrome in the foetus [3-5]. This happens due to umbilical cord compression and potential uteroplacental insufficiency [4,5]. Therefore, termination of pregnancy is advocated even in otherwise uncomplicated pregnancies with Oligohydramnios [6]. However, some of the recent studies have shown no adverse effect of isolated oligohydramnios on perinatal outcome and recommends continuation of pregnancy till term [7,8]. Some studies also advice to try amnioinfusion [9]. This study was conducted to evaluate the effect of isolated oligohydramnios

Serial No	Parity; Age	Mode of delivery	Indication of delivery	Gestation at delivery	USG findings
1	Primigravida; 22 years	LSCS	Foetal distress	34 weeks	AFI 4 cm, clear amniotic fluid, no foetal anomaly
2	Primigravida; 24 years	LSCS	Foetal distress	35 weeks	AFI 3 cm, cord around the neck, clear amniotic fluid, no foetal anomaly
3	Primigravida; 28 years	Spontaneous abortion	-	23 weeks	AFI 4 cm, clear amniotic fluid, no foetal anomaly
4	Primigravida (dichorionic twins); 32 years	Vaginal	Spontaneous labour	32 weeks	AFI 5 cm, clear amniotic fluid, no foetal anomalies
5	Primigravida; 30 years	Spontaneous abortion	-	24 weeks	AFI 4 cm, clear amniotic fluid, no foetal anomaly
6	Primigravida; 29 years	Spontaneous abortion	-	22 weeks	AFI 3 cm, clear amniotic fluid, no foetal anomaly
7	Multigravida; 34 years	LSCS	Foetal distress	34 weeks	AFI 4 cm, clear amniotic fluid, no foetal anomaly

[Table/Fig-1]: Description of the maternal cases.

Serial No	Gestational age	Birth weight	APGAR scores (1 min, 5 min)	Reason for NICU admission	NICU stay	Neonatal complications
1	34 weeks	1865 gm	7, 8	Low blood glucose	3 days	Asymptomatic hypoglycaemia. Treated as per the protocol.
2	35 weeks	2002 gm	7, 9	Precious baby for observation	1 day	None
3	23 weeks	486 gm	-	-	-	-
4	32 weeks	1460 gm (T1) 1410 gm (T2)	7, 8 7, 7	Precious babies for observation and management of low blood glucose	4 days	Asymptomatic hypoglycaemia (in one twin). Treated as per the protocol
5	24 weeks	452 gm	-	-	-	-
6	22 weeks	420 gm	-	-	-	-
7	34 weeks	1780 gm	7, 9	Early onset symptomatic hypocalcemia	5 days	Symptomatic hypocalcemia. Treated as per the protocol

[Table/Fig-2]: Description of the neonatal cases.

during second trimester on the mode and timing of delivery and its association with perinatal morbidity and mortality in our hospital. Our study evaluated isolated Oligohydramnios during second trimester and the pregnancy outcomes. In our study, majority patients were primigravida and had singleton pregnancy. Isolated Oligohydramnios in these cases could be due to constitutional, nutritional factors and higher number of unplanned pregnancies in primigravida.

The common mode of delivery in our study was caesarean section (LSCS) because of foetal distress arising out of cord compression. Reduced amniotic fluid volume was found to be associated with increased risk of caesarean section due to foetal heart rate abnormalities by Morris et al., [2].

Average gestational age at delivery and birth weight of babies was between 29-35 weeks and 1.5-2.0 kg respectively. We also found a significantly higher number of low birth weight babies in our study and this may be due to premature termination because of foetal distress and cord compression. Similarly, Morris RK et al., documented that isolated oligohydramnios is associated with increased likelihood of iatrogenic preterm delivery and comparatively lower birth weights [2]. Another study assessed the optimal definition of Oligohydramnios associated with adverse neonatal outcomes and concluded that AFI < 5<sup>th</sup> percentile better predicts foetuses at risk for adverse perinatal outcomes compared to an AFI < 5 cm [10]. However, this needs further validation.

In the present study, we found that pregnancies complicated by isolated Oligohydramnios were not associated with significant adverse perinatal outcomes except the common ones complicating any other type of pregnancies (e.g., hypoglycaemia, hypocalcemia and low birth-weight). Though, the indications of caesarean sections were foetal distress and/or cord compression, surprisingly no baby had birth asphyxia. These results also strongly correlate with a studies by Ahmad H et al., and Zhang J et al., who used data from multicentre clinical trials to show

that isolated Oligohydramnios is not associated with impaired foetal growth or an increased risk of adverse perinatal outcome [7, 11].

## CONCLUSION

Isolated Oligohydramnios during second trimester does not increase adverse perinatal outcome significantly except the common ones complicating any other type of pregnancies. However, it may increase the caesarean section rate. Isolated Oligohydramnios should not be an indication for termination of pregnancy.

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