



IMPACT OF OLIGOHYDRAMNIOS ON PREGNANCY OUTCOMES: A PROSPECTIVE OBSERVATIONAL STUDY IN A TERTIARY CARE SETTING

Obstetrics & Gynaecology

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ABSTRACT

This prospective observational study investigates the impact of oligohydramnios (AFI < 5 cm) on maternal and neonatal outcomes in 200 singleton pregnancies ≥ 34 weeks at a tertiary care centre. Using Phelan's four-quadrant technique, we assessed amniotic fluid index (AFI), Doppler parameters, delivery mode, and neonatal morbidity and mortality. High cesarean section rates (47%), NICU admissions (36%), congenital anomalies (9%), and perinatal mortality (15%) were observed. Maternal hypertension (21%) and post-dated pregnancies (17%) were common risk factors. Our findings highlight the need for rigorous antenatal surveillance and timely obstetric interventions to improve perinatal health in oligohydramnios.

KEYWORDS

Oligohydramnios Amniotic Fluid Index Perinatal Outcome Cesarean Section NICU Admission Apgar Score

INTRODUCTION

Oligohydramnios, defined by an amniotic fluid index (AFI) below 5 cm, complicates up to 4% of pregnancies and is linked to fetal distress, growth restriction, and adverse delivery outcomes. Risk factors include maternal hypertension, post-maturity, and fetal renal anomalies. Ultrasound assessment of AFI using Phelan's four-quadrant method is central to modern antenatal surveillance, guiding clinical decisions regarding timing and mode of delivery.

Methodology

Study Design And Setting

- Prospective observational study
- Department of Obstetrics & Gynaecology, MLB Medical College, Jhansi, Uttar Pradesh
- Duration:** March 2018 to March 2019

Participants

- Inclusion:** 200 singleton pregnancies ≥ 34 weeks gestation
- Exclusion:** Multiple gestations, pre-labor rupture of membranes, known major congenital anomalies

Data Collection

- Maternal History:** age, parity, comorbidities
- AFI Measurement:** Phelan's four-quadrant ultrasound technique
- Doppler Studies:** Umbilical artery and middle cerebral artery indices
- Delivery Details:** Mode, indication, gestational age at delivery
- Neonatal Outcomes:** Apgar scores at 1 and 5 minutes, NICU admission, congenital anomalies, perinatal mortality

RESULTS

The table below summarizes the incidence of key outcomes in pregnancies complicated by oligohydramnios.

Parameter	Incidence (%)
Cesarean Delivery	47
NICU Admission	36
Congenital Anomalies	9
Low Apgar Score (< 7 at 5 min)	17.5
Perinatal Mortality	15
Associated Maternal Hypertension	21
Post-Dated Pregnancies (≥ 41 weeks)	17

Most anomalies were renal in origin. Elevated surgery and NICU admission rates indicate fetal compromise in low-AFI cases.

DISCUSSION

Our findings mirror previous reports by Casey et al. and Golan et al., demonstrating increased cesarean rates and perinatal morbidity in oligohydramnios. Maternal hypertension and post-dated gestation

emerged as significant contributors, emphasizing the role of early detection and management to mitigate risks.

Integration of Doppler velocimetry allowed tailored timing of delivery, potentially reducing stillbirth rates. Routine AFI assessment combined with color Doppler in high-risk populations can enhance decision making and neonatal outcomes.

CONCLUSION

Oligohydramnios markedly elevates the risk of surgical delivery, NICU admission, and perinatal death. Implementing standardized AFI monitoring, Doppler evaluation, and multidisciplinary care pathways is essential for timely intervention and improved neonatal health.

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Conflicts Of Interest

The authors declare no conflicts of interest.

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