



RETROSPECTIVE STUDY OF EFFECT OF SEVERE OLIGOHYDRAMNIOS ON MATERNAL AND FETAL OUTCOME

Gynecology

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ABSTRACT

Background: Severe Oligohydramnios is being diagnosed more frequently these days because of wide availability and frequent use of ultrasonography. Due to oligohydramnios, risk of intrapartum complications, perinatal morbidity and mortality increases.

Aims and Objective: To study the maternal and fetal outcome of severe oligohydramnios.

Materials and Methods: One hundred and eighty two patients, who were diagnosed with severe oligohydramnios in the Department of Obstetrics and Gynecology, District Hospital Shivpuri from January 2015 to December 2015, were studied. Records were searched for detailed History, physical, systemic, obstetric and pelvic examination details. Record for UGS investigation for amniotic fluid index was also recorded along with effect of severe oligohydramnios on Pregnancy and fetal outcome.

Results: Out of 182 severe oligohydramnios patients, majority required (62.63%) LSCS. The associated risk factors were IUGR (23.07%), PIH (18.61%) whereas it was idiopathic in 47.25% patients. Most of the severe oligohydramnios patients were primipara (78.40%), booked (55.56%), belong to rural area (59.87%) and in most of them baby weight was <2.5kg (46.15%). In most of the cases liquor was 3-5 cm (50.61%). In 42.50% cases growth retarded babies were delivered and 14.28% were having APGAR score <7 at 1 and 5 minute. Neonatal death was recorded in 2.74% cases.

Conclusion: Patients with severe oligohydramnios are more prone to LSCS. Better maternal and fetal outcome can be expected provided intensive fetal surveillance is done in ante partum period and during labor.

KEYWORDS

Oligohydramnios, LSCS, maternal outcome, primipara

Introduction

Amniotic fluid is very important for proper growth and development of fetus. It acts as a cushion in sterile environment. It regulates temperature; provide nutrition, avoid external injury and impact of uterine contractions. During labor, it helps in dilatation of cervix and, prevents cord compression. Along with this amniotic fluid provides useful information about the wellbeing and the maturity of fetus.¹

Reports have shown that amniotic fluid volume decreases with increasing gestational age and reaches approximately 1000 ml by term. Amniotic fluid Index (AFI) is used to measure excess or less volume of amniotic fluid using four quadrant techniques during trans-abdominal USG.^{1,2}

Oligohydramnios is a condition when amniotic fluid volume is decreased. Severe oligohydramnios is a condition when value of AFI is less than 5 cm. AFI between 5 to 8 is termed as borderline oligohydramnios.³

Though oligohydramnios can develop in any trimester but large number of reports has shown that it is more commonly seen in third trimester. About 12% woman may develop oligohydramnios after 42 weeks, due to declining placental functions.⁴ Decreased value of AFI has been positively correlated with increased risk of intrauterine growth retardation, birth asphyxia me conium aspiration syndrome, low APGAR scores & high risk of congenital anomalies.^{5,6}

Severe oligohydramnios is also linked with maternal morbidity in terms of increased rates of induction and operative interventions.¹ For better perinatal outcome increased induction of labor and caesarean deliveries are currently performed. Early detection of oligohydramnios and its management may help in reduction of perinatal morbidity and mortality and reduced operative rates. Hence this retrospective study was done to find out the maternal and fetal effects of severe oligohydramnios

Materials and Methods

In a retrospective analysis record was searched for 182 patients diagnosed with severe oligohydramnios in the department of Obstetrics and Gynecology, District Hospital Shivpuri from January 2015 to December 2015.

All the patients admitted in labor room with diagnosis of severe

oligohydramnios both clinically and by USG were evaluated for inclusion and exclusion criteria. Patients with intact membrane, with AFI between 0-5 by USG and maturity >34 weeks were included. Patients with PROM and referred cases of severe IUGR were excluded from the study.

Records were searched for general, physical, systemic, obstetric and pelvic examination, investigations including UGS for AFI. Effect of Oligohydramnios on pregnancy and fetal outcome was also recorded with respect to induction of labor and mode of delivery, incidence of me conium stained liquor during labor intrapartum fetal distress and neonatal morbidity and mortality.

All the data were analyzed using IBM SPSS ver. 20 software. Frequency distribution and cross tabulation was used to prepare tables. Data is expressed as percentage.

Results

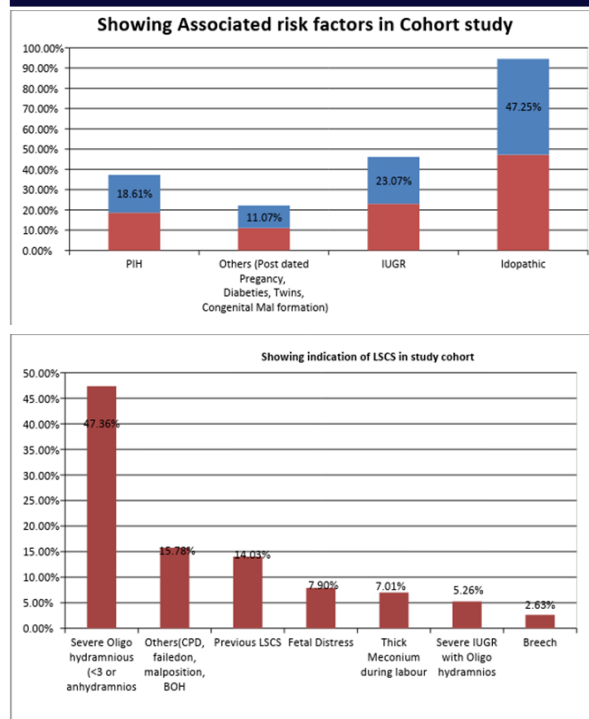
The common age group of severe oligohydramnios patients was 20 to 25 years with mean age of 23.5 years. In our study total 182 cases were of severe oligohydramnios liquor status was 3-5 cm, in 50.61%, <3 cm in 22.22 and in 27.16% there was no liquor at all.

Out of 182 severe oligohydramnios, majority patients underwent LSCS [114 (62.64%)] followed by normal deliveries [68(37.36%)]. The associated risk factors were IUGR (23.07%), PIH (18.61%), others 11.07% (Diabetes, Twins, post dated pregnancy and congenital malformation) whereas it was idiopathic in 47.25% patients.

Table 1: Showing demographic profile of study cohort

Parameters		Percentage (n=182)
Parity	Primipara	78.40
	Multi gravida	21.60
Antenatal status	Booked	55.56
	Un booked	44.44
Residence	Rural	59.87
	Urban	40.12
Baby weight (kg)	<2.5	46.15%
	>2.5	53.85%

Data is expressed as percentage only.



Data is expressed as percentage, IUGR; Intrauterine growth restriction, LSCS; lower (uterine) segment cesarean section.

In our study the most common indication of LSCS was severe Oligo hydramnios with AFI <3 or no liquor at all. 47.36% and second most common cause was previous LSCS 14.03%.

Table 2: Showing neonatal outcome in study cohort

Shifted with Mother	154	84.61 %
Low birth weight newborn	77	42.50 %
NICU Admission	26	14.28 %
Respiratory Distress Syndrome	9	4.94 %
Meconium aspiration syndrome	10	5.49 %
Other cause of morbidity	7	3.84 %
Neonatal death	5	2.74 %

Data is expressed as percentage, APGAR; appearance, pulse, grimace, activity, respiration, NICU; neonatal intensive care unit.

In our study 14.28% of the babies who had APGAR score < 7 were shifted to NICU. The most common causes of neonatal morbidity was respiratory distress syndrome, meconium aspiration syndrome and sepsis. 2.7% of neonates were died.

Discussion

Severe oligohydramnios is a frequent occurring condition in pregnancy. All cases of severe oligohydramnios need intensive antepartum and intrapartum care with evolution of gestational age. Due to oligohydramnios, risk of intrapartum complications, perinatal morbidity and mortality increases. In present study we tried to evaluate the factors associated with severe oligohydramnios.⁶

The mean maternal age in present study was found to be 23.5 years which is in agreement with the study done by Jagatia et al where author reported mean age as 23.9 years.⁷ In a similar study of 100 severe oligohydramnios patients, Bhat et al reported the common age group of 20-30 years.⁸ In present study the incidence of severe oligohydramnios in primigravidas was found to be high (78.40%) as compared to multi gravidas which is higher than what is reported by in study conducted by Brian et al (60%).⁹

In present study rate of LSCS was (62.64%) which is opposite to the results obtained by Umber et al where author reported vaginal deliveries in majority of their patients (62%).¹⁰ In study done by Weiss et al¹¹ and Yound et al¹², rate of LSCS was 71% and 69.7% respectively which was comparable to this study.

In present study 47.36% patients had to be directly taken up for caesarean section because of severe oligohydramnios of <3 or anhydramnios, a rate which is comparable to study done by Jandial et al.¹³ Other most common indication for cesarean section in present study was previous LSCS (14.03%) followed by fetal distress (7.9%), which is comparable to reports of Jagatia et al⁷ where author reported fetal distress as most common (21%).

Study done by Kansal et al including 192 patients reported that 43% of newborn had birth weight < 2.5kg which comparable to present study where we found 46.15% having birth weight < 2.5kg.¹ Higher incidence of low birth weight reported by Kansal et al was due to the fact that Kansal et al had more patients with risk factors like severe preeclampsia, congenital anomalies, severe oligohydramnios AFI < 2 cm or anhydramnios. Similar to present study Bhat et al also reported 36% of the cases who had birth weight of <2.5%.⁸ Similar reported were found by Ott et al.¹⁴

In our study 14.28% of babies had APGAR score <7 as compared to 15% in study of Zhang et al, Bhat et al and Manning et al respectively.^{8, 15, 16} Similar results were observed by the study done by Kansal et al which reported that 15% of babies had APGAR score <7.¹ In Sariya et al¹⁷ it was 38%.

In present study it was 14.28% of the babies who had APGAR score <7 were shifted to NICU. In study conducted by Johnson et al the reported rate was 12%.¹⁸

Neonatal mortality was found to be only 2.74% in our study but Kansal et al reported higher mortality rates (5.9%).¹ Compared to present study Wolff et al¹⁹ and Apel-Sarid et al²⁰ also reported higher mortality rates of 7.2% and 9.9% respectively. Golan et al²¹ show 6.3% neonatal death in deliveries of oligohydramnios patients which is higher than what is revealed in present study (2%).

Cross sectional nature and small sample size were the main limitation of the present study which restricts the use of current findings for large population. A large randomized trial is required to strengthen the present study findings.

Conclusion

Early diagnosis of oligohydramnios, evaluation of the cause and severity of oligohydramnios and assessment of gestational age are essential for management of oligohydramnios. Better maternal and fetal outcome can be expected provided intensive fetal surveillance is done in antepartum period and during labor. Timely intervention is also required to balance between pre maturity and hostile intrauterine environment to reduce the risk of perinatal morbidity and mortality.

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