



MATERNAL AND FETAL OUTCOME OF TERM OLIGOHYDRAMNIOS AT TERTIARY CARE HOSPITAL

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ABSTRACT **Introduction-** Amniotic fluid is considered as an important marker of fetal well being which varies with gestational age and depends on the dynamic interaction between placenta, fetus and maternal components. Oligohydramnios is defined as AFI <5cm (amniotic fluid index) or the maximum vertical pocket of liquor is less than 2 cm. It has been correlated with increased risk of intrauterine meconium aspiration, growth retardation, low APGAR score, severe birth asphyxia, and various congenital abnormalities. **Aims and Objectives-** To study the fetomaternal Outcome in Term Oligohydramnios. **Material and Methods-** This study was conducted in the department of Obstetrics and Gynaecology at Dr. N. Y. Tasgaonkar Institute of Medical Science over a period of 6 months from March 2022 to August 2022. 50 patients in third trimester of pregnancy with oligohydramnios were selected after considering inclusion and exclusion criteria. **Results-** This study was performed in 50 pregnant women with amniotic fluid index <5 cm with singleton pregnancy. In this study 27 out of the 50 patients (54%) had vaginal delivery (either spontaneous or induced) and 23 patients (46%) underwent lower segment caesarean section. Patients with amniotic fluid index 4 - 5cm on USG were 26 (52%) followed by AFI 2-4 cm was 15 (30%) and AFI <2 cm was 9 (18%). Low birth weight (<2.5 kg) was seen in 8 newborns (16%). APGAR <7 at 5 minutes were seen in 12 newborns (24%). NICU was required for 16 newborns (32%). Fetal congenital anomalies were seen in 3 cases (6%). congenital anomalies were hydronephrosis, hypoplastic kidneys and multiple congenital anomalies. **Conclusions-** In conclusion, oligohydramnios in term pregnancies is associated with an increased risk of obstetric interventions as well as NICU admissions. All cases of oligohydramnios require intensive antepartum, intrapartum care and require NICU admission. Early detection of oligohydramnios, evaluation of the cause and severity of oligohydramnios, assessment of gestational age are essential for management and helpful in its outcome. Its management may help in reduction of perinatal morbidity, mortality, decreased caesarean deliveries and less NICU admissions.

KEYWORDS : Amniotic fluid index, Oligohydramnios, Maternal outcome, Fetal outcome

INTRODUCTION

The amniotic fluid bathes the fetus is necessary for its proper growth, development and nourishment. Decrease in amniotic fluid volume or Oligohydramnios [1] has been correlated with increased risk of intrauterine growth retardation, meconium aspiration syndrome, severe birth asphyxia, low APGAR scores and congenital abnormalities[2]. During antenatal fetal surveillance, amniotic fluid assessment is a crucial barometer to know the fetal status[3]. Primal sonographic sign of an obstetrical issue is abnormal amniotic fluid volume[4]. It is normally anticipated as a sign of placental insufficiency[5].

Amniotic fluid is a clear, slightly yellowish liquid which act as a shock absorber and surrounds the fetus in the amniotic sac during pregnancy. Amniotic fluid is produced after the amniotic sac is formed about 12 days after conception. It is first made up of effusion by the mother's circulation and then around the 20 weeks fetal urine becomes the primary substance [6]. The fluid is faintly alkaline with low specific gravity of 1.010. Volume of amniotic fluid decreases with increasing gestational age. It measures about 50 ml at 12 weeks, 400 ml at 20 weeks and peak is seen of 1 liter at 36-38 weeks thereafter the amount diminishes and at term it measures about 600-800 ml [7]. Oligohydramnios also increase the caesarian section rate for fetal distress up to 41%[8]. It also escalate the maternal morbidity and mortality by maternal complications like inertia, increased operative interference due to malpresentation ultimately[8,9].

It act as a shock absorber to the fetus from physical trauma, permits fetal lung growth, and provides a barrier against infection during pregnancy helps in growth and development by regulating temperature, providing nourishment, avoiding external injuries and impact of uterine contractions and prevents adhesion between fetal parts and amniotic sac. With the help of method of amniotic fluid estimation by Amniotic fluid Index (AFI) using four quadrant technique during transabdominal USG, as per described by Phelan et al [10] in 1997, better identification of fetus at high risk can be done. Amniotic fluid volume is assessed by amniotic fluid index (AFI) using four quadrant technique during transabdominal USG [11]. Decrease in amniotic fluid volume is known as oligohydramnios. Oligohydramnios is defined as AFI <5cm (amniotic fluid index) or the maximum vertical pocket of liquor is less than 2 cm. Normal range is 5cm-25cm. The incidence of oligohydramnios is 0.5-1% of all pregnancies [12]. It can lead to deformation syndromes such as cranial,

facial or skeletal abnormalities, pulmonary hypoplasia, urinary tract malformations and adverse perinatal outcome [13].

The lower the amniotic fluid volume, the greater the incidence of perinatal morbidity and mortality. There is an inverse relationship between amniotic fluid outcome and pregnancy outcome [14]. Study was conducted to observe outcome of labour in form of perinatal morbidity and maternal outcome in the form of induction and deliveries: (1) To study effects Oligohydramnios on fetal outcome in form of – (a) Fetal distress, (b) Growth retardation, (c) NICU admissions; (2) To study APGAR scores of newborn babies in relation to Oligohydramnios; (3) To study incidence of congenital malformation; (4) To study early neonatal morbidity and mortality; (5) To study maternal morbidity in form of operative delivery and induced labour. A detailed history and examinations were done. All required investigations were done. Oligohydramnios confirmed by measuring AFI with the help of USG. Decision of delivery to be done either by induction or elective or emergency LSCS was taken as per required. Cases were than studied for maternal as well as perinatal outcome.

MATERIALS AND METHODS

This study was conducted in the department of Obstetrics and Gynaecology at Dr. N. Y. Tasgaonkar Institute of Medical Science over a period of 6 months from March 2022 to August 2022. 50 patients in third trimester of pregnancy with oligohydramnios were selected randomly after considering inclusion and exclusion criteria.

Inclusion Criteria- Antenatal patients in their third trimester with intact membranes, amniotic fluid index <5, singleton pregnancy.

Exclusion Criteria- Antenatal patients having heart diseases, polyhydramnios, premature rupture of membranes, twins and multiple pregnancies, diabetic patient, maternal hypertensive disease were excluded.

A detailed history and examinations were done. All required investigations were done. Amount of liquor amnii in the present study was assessed by ultrasonography. since there are various methods for sonographic assessment of amniotic fluid, amniotic fluid index (AFI) was taken as the criteria. Routine management in the form of rest, left lateral position, oral and intravenous hydration and control of the etiological factor was done if present. Fetal surveillance was done by USG, modified Biophysical profile and Doppler. Decision of delivery by either induction or elective or emergency LSCS was taken as per

required. Cases were then studied for maternal and perinatal outcome

OBSERVATIONS AND RESULTS:

This study was performed in 50 pregnant women with amniotic fluid index <5 cm with singleton pregnancy. Patients with amniotic fluid index 4-5cm on USG was 26 (52%) followed by AFI 2-4 cm was 15 (30%) and AFI <2 cm was 9(18%) [Table 1]. Colour of amniotic fluid Clear 30 (60%), Thin Meconium 14 (28%) and Thick Meconium 6(12%) [Table-2]. In this study 27 out of the 50 patients (54%) had vaginal delivery (either induced or spontaneous) and 23 patients (46%) underwent lower segment caesarean section [Table 3]. The most common indication for caesarean section was severe oligohydramnios 9(18%) followed by fetal distress 13 (26%), failure of induction 9(18%), severe IUGR 8(16%) and malpresentations 11 (22%). Incidence of low birth weight babies (< 2.5 kg) was seen in 8 newborns (16%). APGAR (appearance, pulse, grimace, activity, respiration) score was calculated in all newborns at 5 minutes. 12 babies had APGAR score <7 at 5 minutes (24%). Normal Newborns were 14 overall. NICU was required in 16 newborns (32%) [Table 5]. Fetal congenital anomalies were seen in 3 cases (6%), congenital anomalies were hydronephrosis (2%), hypoplastic kidneys (2%), multiple congenital anomalies (2%) and diaphragmatic hernia not detected in any of the cases [Table 6].

TABLE-1: AMNIOTIC FLUID INDEX(N=50)

SR NO.	AFI in cm	N= NUMBER	PERCENTAGE%
1	<2	9	18%
2	2-4	15	30%
3	4-5	26	52%
TOTAL		50	100%

TABLE-2: COLOUR OF AMNIOTIC FLUID (N=50)

SR. NO.	LIQUOR	NUMBER	PERCENTAGE%
1	Clear	30	60
2	Thin Meconium	14	28
3	Thick Meconium	6	12
TOTAL		50	100

TABLE-3: MODE OF DELIVERY (N=50)

Sr.no	Mode Of Delivery		Number	Percentage%
1	Vaginal	Spontaneous	7	14
		Induced	20	40
2	Cesarean Section		23	46
TOTAL			50	100

TABLE-4: INDICATION OF LSCS (N=23)

SR. NO.	INDICATION	NUMBER	PERCENTAGE
1	SEVERE IUGR	6	12
2	FETAL DISTRESS	6	12
3	SEVERE OLIGOHYDRAMINOS	5	10
4	MALPRESENTATION	2	4
5	FAILURE OF INDUCTION	4	8
TOTAL		23	46

TABLE-5: NEONATAL OUTCOME (N=36) NORMAL= 14

SR. NO.	NEONATAL OUTCOME	NUMBER	PERCENTAGE
1	BIRTH WEIGHT <2.5 KG	8	16
2	APGAR <7 AT 5 MINUTES	12	24
3	NICU ADMISSION	16	32

TABLE-6: Congenital Malformations (N=3)

SR. NO.	CONGENITAL MALFORMATIONS	NUMBER	PERCENTAGE%
1	Hydronephrosis	1	2
2	Hypoplastic Kidneys	1	2
3	Multiple Congenital Anomalies	1	2
TOTAL		3	6

DISCUSSION

Ultrasound examination during that period is sensitive as well as reliable method of assessing the amniotic fluid and to detect oligohydramnios or polyhydramnios. Women who are at risk for potentially adverse perinatal outcomes can be identified by the assessment of amniotic fluid volume (AFI) in antenatal period [15]

Similar findings were seen in study conducted by Bangal V B et al. [8] that 56% of oligohydramnios women had spontaneous vaginal

delivery and 44% had operative/assisted delivery. Incidence of low birth weight baby < 2.5 kg was seen in 19 newborns (29%). APGAR (appearance, pulse, grimace, activity, respiration) score was calculated in all newborns at 5 minutes. Fetal congenital anomalies were seen in 3 cases (6%). In study by Sowmya K et al. [16] low birth weight was seen in 48%, Apgar score <7 seen in 14% and 14% were admitted in NICU. In a study conducted by Guin G et al. [17] the congenital malformations were bilateral polycystic kidneys, hydronephrosis with hydroureter and omphalocele. In our study the most common congenital anomaly was hydronephrosis. Sir Gangaram Hospital study [18] shows 68% vaginal deliveries in induced patients of Oligohydramnios and 32% by caesarean section which is comparable to our study. Manzanares S et al [19] shows 84% vaginal deliveries in induced patients of Oligohydramnios and 16% by caesarean section. Oligohydramnios except in post maturity where the babies may have average birth weight. In Manning et al [20] 15% babies had APGAR score < 7. In Raj Sariya et al [21], it was 38%. In Julie M Jhonson et al [22] 20% babies had NICU admission. Golan et al [23] show 6.3% neonatal death in deliveries of Oligohydramnios patients which is observed our study. To identify women who need increased antepartum surveillance for pregnancy complications, Antepartum measurement of AFI can very much helpful. Oligohydramnios is significantly associated with the abnormal fetal growth and IUGR. So timely intervention by an obstetrician will be help in improving the perinatal outcomes.

CONCLUSION

Oligohydramnios in term pregnancies is associated with an increased risk of obstetric interventions. Oligohydramnios is frequent occurrence and demands intensive fetal surveillance, proper antepartum as well as intrapartum care and NICU admissions. Early detection of oligohydramnios, evaluation of the cause and severity of oligohydramnios and assessment of gestational age are essential for management as well as fetal outcome. Its management may help in reduction of perinatal morbidity, mortality and decreased caesarean deliveries.

In the presence of oligohydramnios, the occurrence of thick meconium stained liquor, development of fetal distress, the rate of LSCS, low Apgar score, low birth weight the Morbidity and mortality are more. Determination of AFI is a valuable screening test for predicting fetal distress in labor. Amniotic fluid volume is the predictor of fetal tolerance in labour and its decrease is associated with the increased risk of fetal distress and meconium stained fluid. Due to intrapartum complications and high rate of perinatal morbidity and mortality, rates of caesarean section are rising day by day, but decision between vaginal delivery and caesarean section should be well balanced so that the unnecessary maternal morbidity can be prevented and other side timely interventions can reduce perinatal morbidity as well as mortality.

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