

A Retrospective Study of Maternal and Fetal Outcome in Severe Oligohydromnios.

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Abstract: Amniotic fluid is the nourishing & protecting liquid of the amnion of a pregnant woman & at 10 weeks it contains proteins, carbohydrates, lipids, phospholipids, urea, electrolytes all of which helps in the growth of fetus & in later stages it consists of fetal urine. As the fetus grows amniotic fluid increases to maximum of 800-1000ml at 34 weeks and decreases to 600-800ml at 40 weeks. It protects the baby by cushioning too. Any decrease in the amniotic fluid leads to intra uterine growth restriction, meconium aspiration syndrome, severe birth asphyxia, low Apgar scores, congenital abnormalities, contracture of the limbs, clubbing of feet & hypoplastic lungs. so early detection and intervention might decrease the perinatal mortality and morbidity and decrease in the C-section rate also. **Aims & Objectives:** To study the effect of severe oligohydramnios on maternal morbidity, neonatal morbidity & mortality & incidence of congenital abnormalities. **Materials & Methods:** 100 cases of term pregnancies with severe Oligohydromnios admitted to labour room, between June 2013 to Dec 2013 were selected. After considering inclusions & exclusion criteria, a detailed history was taken and general physical examination, obstetric examination & clinical pelvimetry was done & Bishops score was assessed. Severe Oligohydromnios was confirmed by estimation of AFI by USG & in all cases Doppler study was done. **Conclusion:** Severe Oligohydromnios has been linked with adverse perinatal outcome which includes structural anomalies, SGA, IUGR, post maturity syndrome, cord compression, MAS & FHR variations & increased perinatal morbidity & mortality. Hence it demands early diagnosis, intense antenatal care of maternal & fetal factors, intervention with hydration and isotonic therapy, intense intrapartum care, intervention at the appropriate time to decrease fetal morbidity & mortality.

Key words: Oligohydromnios, Maternal outcome, Fetal outcome, Caesarean section, Induced labour

I. Introduction

Oligohydromnios by definition is (1) Amniotic fluid volume <5th percentile for gestational age¹ (2) AFI < 5² (3) Single vertical pocket <2cm. Incidence is 0.5-5 % of normal pregnancies³. It cushions the baby and acts as shock absorber, protects cord compression, helps in the development of musculoskeletal systems, GIT and pulmonary development and prevents adhesions. It maintains fetal body temperature, supplies nutrition and has bacteriostatic properties. Decrease⁴ in amniotic fluid has been correlated with increase in risk of IUGR, pulmonary hypoplasia⁵, MAS, fetal heart conduction abnormalities, IUFD and increase in the rate of induction of labour & C-section⁶. In 1987 Phelan et al⁷ introduced AFI to assess the amount of amniotic fluid in the amniotic sac⁶ using 4 quadrant technique. AFI is a poor predictor of perinatal outcome. A low AFI might warrant increase in the obstetric intervention without improving the neonatal or maternal outcomes^{1, 7, 8}. So individualised care with consideration of maternal and fetal factors, cervical readiness and emotional readiness for labour should be considered.

II. Materials & Methods:

This retrospective study was conducted in the department of OBG, MIMS Mandya from June 2013- Dec 2013. The study group comprised of 100 patients, who were admitted to Labour room with diagnosis of severe Oligohydromnios both clinically & by USG. **Inclusion criteria:** 1. Singleton pregnancy 2. Intact membranes 3. AFI 0-3 by USG. **Exclusion criteria:** 1. Abnormal position & presentation 2. Associated with renovascular disorders 3. Polyhydromnios 4. PROM 5. fetal anomalies 6. Multiple pregnancies.

A detailed history was taken, general physical & systemic examination, obstetric & pelvic examination was done and Bishop's score was assessed. All required investigations were done including USG for AFI and Doppler study. Effect of Oligohydromnios on Pregnancy outcome & fetal outcome was observed with respect to (1) induction of labour and mode of delivery, (2) incidence of meconium stained liquor, (3) intrapartum fetal distress, (4) neonatal morbidity & mortality by Apgar score and NICU admission.

Decision for delivery either by induction or emergency LSCS was taken depending upon Bishop's score & as required and later cases were reviewed for maternal and perinatal outcome.

III. Results:

90% of the cases were unbooked and 70% belonged to age group of 24-30yrs. Incidence of Oligohydromnios was 60% in primi and 40% in multi. Bishop's score was <4 in 90% of cases & >6 in 10% of cases. AFI was 0 in 90% of the cases and 2-3 in 10% of the cases. Abnormal Doppler was present in 25% of the cases. Associated high risk factors were idiopathic in 55% of cases, PIH in 10% cases., Anaemia in 25% of the cases & IUGR in 10% of cases. Operative delivery was higher in AFI 0 with abnormal Doppler group & 10% had NICU admissions.

In our study 10% of cases with Bishop's score more than 6 had induction of labour with cerviprime gel and later accelerated by ARM and oxytocin drip delivered vaginally. 2 babies died due to meconium aspiration syndrome after NICU admission. In 70% of the cases there was no liquor at all, scanty clear liquor seen in 15% of the cases and thick meconium stained liquor in another 15% of the cases.

Table I: Relation between Bishop's score ,AFI and pregnancy outcome.

AFI	%	Vaginal delivery	C-section
0	90	3(3.3%)	87(96.6%)
2-3	10	10	-

Table II: Associated High risk factors& outcome of labour.

Category 1 (High Risk)	Normal vaginal delivery	C-section	Total
PIH 10	-	10	10
Anaemia 25	8(32%)	17(68%)	25
Severe IUGR 10	-	10	10
Idiopathic 55	5(9.1%)	50(90.9%)	55

Table III: Fetal outcome

Growth retardation	20%
Apgar score<7 in1-5mins	15%
NICU Admission	10%
Neonatal death	2(2%)

IV. Discussion:

Oligohydromnios is associated with increase risk of IUGR, pulmonary hypoplasia, MAS, fetal heart abnormalities & increase in C-section. IUGR is a significant in utero complication that can have profound effects on brain development including reduced myelination & deficit can continue into adulthood. In our study the mean age group is between 24-30yrs, it correlates with the study of Casey et al⁵.

Incidence of severe Oligohydromnios was 60% in primigravida & it correlates with the study of Donald D et al⁶. In patients with AFI 0, 3.3% had vaginal delivery & the incidence of operative deliveries (96.6%) was higher which does not correlate with studies by Weiss et al⁹ and others. In our study 25% had abnormal Doppler & correlates with Weiss et al study⁹. Common indication for LSCS was fetal distress. In our study 20% of the babies were SGA & 80% AGA, which is nearly comparable to the study by Brain M Casey et al where there was 24% SGA & 75.5% AGA⁵ and study by Manning et al¹⁰; incidence of AGA was 36%. Mean birth weight was 2.4 kg which is similar to study by William ott et al¹¹. In our study there was 2 neonatal deaths (2%), where as study by Golan et al⁽¹²⁾, it was 6.3%. In 70% of the cases there was no liquor at all, scanty clear liquor was seen in 15% of the cases & thick meconium liquor in 15% of cases.

V. Conclusion:

Oligohydromnios is a condition where there is very low or absent amniotic fluid & was first described by Potter. It demands intense Antepartum, Intrapartum care & fetal surveillance, as it is frequently associated with IUGR, Fetal distress, PIH, PROM, Fetal renal abnormalities as renal agenesis, bilateral cystic kidneys and obstructive uropathy. It can occur in future pregnancy due to genetic abnormality. In our study maximum cases belonged to idiopathic Oligohydromnios and had poor bishop's score (<4).

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