

A Clinical Study on the Perinatal Outcome of Oligohydramnios in the Third Trimester of Pregnancy

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Abstract

Background: Oligohydramnios literally means ‘too little amniotic fluid’ around the fetus. . It is a condition where the liquor amnii is deficient in amount to the extent of less than 200 ml at term.

Objectives: The above study was conducted to find out the perinatal outcomes in pregnancies with oligohydramnios, especially in the third trimester of pregnancy.

Methods: This prospective and observational study was conducted in J.L.N Medical college and Hospital Bhagalpur from January to December 2017. In this study 60 singleton pregnant women with gestational age from 30 - 42 weeks with less amniotic fluid index (AFI) were analyzed for perinatal outcome. P value <0. 05 was taken as level of significance.

Results: Women with oligohydramnios were significantly associated with an abnormal antepartum fetal heart rate (FHR), meconium stained fluid, Apgar score less than 7 or NICU admission. Also subjects with AFI of 5. 0 cm or less had a higher rate of cesarean section for fetal distress.

Conclusions: Antepartum oligohydramnios is associated with an increased risk of fetal heart rate abnormalities. Although in our population it is not predictive of adverse perinatal outcome as measured by low Apgar score and

NICU admission, yet this may be reflective of the aggressive antepartum and intrapartum management that these patients received.

Keywords: Oligohydramnios, third trimester of pregnancy, perinatal outcomes.

Introduction

Oligohydramnios literally means ‘too little amniotic fluid’ around the fetus. . It is a condition where the liquor amnii is deficient in amount to the extent of less than 200 ml at term^[1]. About 8 -10 % of pregnant women can have low levels of amniotic fluid, with about 5% being diagnosed with oligohydramnios. Amniotic fluid can be measured by a many different methods, most commonly through amniotic fluid index (AFI) evaluation or deep pocket measurements (MPD) or maximum pocket depth. . If an AFI shows a fluid level of less than 5 centimeters (or less than the 5th percentile), the absence of a fluid pocket 2-3cm in depth, or a fluid volume of less than 500ml at 32-36 weeks of gestation, then a diagnosis of oligohydramnios would be suspected^[1].

Oligohydramnios is associated with increased pregnancy complications, congenital anomalies and perinatal mortality and morbidity. Multiple studies have been done on oligohydramnios and its cause and effect on the

pregnancy. This study also done to assess the effects of oligohydramnios on perinatal outcome at 3rd trimester of pregnancy based on amniotic fluid index (AFI).

Materials And Methods

This was a prospective study. A total of pregnant women from January 2015 to December 2016 were admitted in J.L.N.M.C.H (Jawaharlal Nehru Medical College & hospital), Bhagalpur, in the department of Obstetrics & Gynaecology. In this study, 60 singleton pregnant women with gestational age between 30 -42 wks with less amniotic fluid were analyzed for perinatal outcome.

For the purpose of this study oligohydramnios was defined as when clinically an amniotic fluid was suspected to be reduced and sonographically AFI was less than 8 cm.

Pregnant women having normal amniotic fluid volume with medical complications like gestational diabetes mellitus, hypertension, heart disease or any obstetric complications like preeclampsia, eclampsia, multiple pregnancy, antepartum hemorrhage etc were excluded from this study.

A written informed consent was taken from each of the patient included in the study & the study was passed by the ethics commiti.

Entry and baseline demography, past obstetrics and medical history were recorded in a data sheet, clinically suspected cases of oligohydramnios were sonographically confirmed by measuring AFI. Previous sonographic report if available, were also recorded. By transabdominal ultrasonography AFI (amniotic fluid index) was measured by four-quadrant technique by dividing the uterus into four quadrants.

On admission, fetal surveillance was done by BPP, which included foetal cardiotocography (CTG) and ultrasonography. Fetal heart rate was monitored by CTG. It was done for 20 minutes. Baseline FHR, beat to beat variability acceleration and decelerations were observed.

Variable deceleration or late deceleration or prolonged bradycardia was taken as indicators of foetal distress and these had influenced the pattern of management towards caesarean section. Gestational age at the time of delivery was recorded. Liquor was assessed (volume, colour etc) at the time of rupture of the membranes, during labour and at the time of lower segment caesarean section (LSCS).

Mode of delivery, either normal or assisted vaginal delivery or caesarean section was recorded. APGAR score and neonatal birth weight were also recorded. All relevant information recorded were appropriately analysed by SPSS 18.

Results

A total of 570 were. Among admitted pregnant women during this 12 months period , 60 were diagnosed as oligohydramnios.

Table -I shows characteristics of pregnant mother including age, parity, educational status, AFI on admission, estimated age of delivery and mode of delivery.

	Number	Percentage
Age group		
20-25	12	20
26 – 30	30	50
31 – 35	12	20
>35	6	10
Parity		
Nulliparous	18	30
Multiparous	42	70
AFI on admission		
5. 1 – 8 cm(borderline oligo)	42	70
<5 cm (severe oligohydramnios)	18	30
GA at delivery (weeks)		
< 37	42	70
>37	18	30

Table-1: Demographic characteristics of the patients

Mean age of the patients was 24. 583. 99 SD and of all these 50% were between 25-30 years. 30% patients were nulliparous and 70% patients were multiparous. Among 60 pregnant women borderline oligohydramnios was 70% and severe oligohydramnios was 30%. About 70% patients were delivered at less than 37 completed weeks i. e. preterm delivery. In most of the cases (70%) delivery was by caesarean section and 50% caesarian sections were because of fetal distress .

Table -II shows 40% normal CTG and 60% abnormal CTG on admission.

CTG	Number	Percentage (%)
Normal CTG	24	40
Abnormal CTG	36	60

Table – 2: (CTG on admission) N= 60

Table-III indicates colour of the liquor. At the time of membrane rupture colour of the liquor was found normal in 70% cases and 30 % cases was meconium stained.

Colour of liquor	Number	Percentage (%)
Clear/ normal	42	70
Meconium stained liquor	18	30

Table-3: Colour of liquor at the time of rupture of membranes

Table -IV shows that caesarean section was significantly higher in severe oligohydramnios group than in borderline oligohydramnios group.

Oligohydramnios	CS	NVD
Borderline Oligohydramnios(N=48)	36	12
Severe Oligohydramnios(N=12)	12	0

Perinatal outcome including birth weight, Apgar score, meconium aspiration syndrome and NICU admission. Among 60 babies low birth weight baby was 65%. Apgar score <7 at 5 minute was found in 21 babies. Among 60 babies 15% suffered from respiratory distress and 10% from meconium aspiration syndrome. 15 neonates were admitted in neonatal ward with these complications.

Discussion

It is well established that oligohydramnios is associated with high risk adverse perinatal outcomes. On the other hand, oligohydramnios is a poor predictor for adverse outcomes^[4]. But oligohydramnios is often used as an indicator for delivery. So assessment of amniotic fluid volume in antenatal period is a helpful tool in determining who is at risk for potentially adverse perinatal outcome. In our study, maximum number of women (n=30) were in the age group 26-30 years (50%). Sixty four percent women were multigravida, 38% women presented at gestational age 34-36 wks. Studies done by Cosey et al^[3], Chauhan^[4], Magann^[5] et al. there was no significant relation of age and parity with oligohydramnios. In our study only 24 patients had meconium stained liquor which was 30. 76%. In Coseys3 study among 147 oligohydramnios patients meconium stained liquor was found only in 9 patients, which was only 6%. He stated that meconium stained liquor less often complicated the pregnancy with oligohydramnios.

This study showed no obvious relation between meconium stained liquor and oligohydramnios. Elective caesarian section was done in 12%, 28% women had normal vaginal delivery and 71% underwent caesarian section, out of which 51% had fetal distress. Chauhan et al found that AFI <5cm was associated with an increased incidence of caesarian section delivery for fetal distress. Anna et al^[6] found that 15. 2% caesarian section delivery among 341 oligohydramnios patients. Voxman^[7] also found increased rate caesarian section (14. 7%) for fetal distress in oligohydramnios group. In Annaet al study and voxmans study caesarian section rate was high in oligohydramnios patients but not significantly higher as it is found in this study. Probably due to less facilities for fetal monitoring well being during antepartum and intrapartum period. So for the avoidance of adverse effects on perinatal outcome

in most cases caesarian section was done. Meconium stained liquor was seen in 44% of women in our study, while youseff et al^[8] indentified it is 40% of females. This suggests that there is high incidence of meconium stained liquor and poor placental reserve in oligohydramnios patient. Sarno et al^[9] noted a significantly higher rate of fetal distress and low Apgar score in women with AFI 5 cm. This is reported to be due to head and cord compression. Golam et al^[10] reported a low Apgar score at 5 minutes in 4. 6% babies, in contrast to a figure of 21% noted by us. This difference in rates observed is because of better intrapartum fetal assessment facilities available in developed countries. They concluded that liberal use of amnio-infusion in women diagnosed with oligohydramnios might have resulted in improved outcomes which were not seen in previous Oligohydramnios at third trimester and perinatal outcome studies. Casey et al^[3] found respiratory distress in 3. 4% of neonates at birth in contrast to 15. 3% as noted by us. The incidence of NICU admission was found to be 19% by Garmel et al^[11] which is in accordance to our results (15%). Oligohydramnios has been recognized as a clinical hallmark of impending severe perinatal compromise. We have found 2. 4% perinatal deaths (1 still birth and 1 neonatal death) where as Casey et al reported 6. 4% perinatal deaths. Ja -young et al^[12] in a recent study have concluded that in the borderline AFI group, the presence of abnormal dorsal velocimetry measurement was related to adverse perinatal outcomes and mandates closer antenatal surveillance.

Conclusion

Oligohydramnios is associated with a high rate of pregnancy complications and increased perinatal morbidity and mortality. AFI measurement in antepartum or intrapartum period can help to identify women who need increased antepartum surveillance for avoidance of

pregnancy complications and such women should be managed in a special unit to combat the complications effectively so that perinatal outcomes can be better. Thus ensuring a healthy mother delivering a healthy baby the ultimate aim of every obstetrician.

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