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Original Research Article

"Factor Associated and Neonatal Outcome with Oligohydramnios"

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Abstract: ***Background:*** The amniotic fluid (AF) is a part of the baby's life support system. It aids in the development of muscles, limbs, lungs and digestive system. Amniotic fluid is produced soon after the amniotic sac is formed at about 12 days after conception. ***Objective:*** To find out factor associated and neonatal outcome with oligohydramnios. ***Methods:*** This was a cross-sectional observational study conducted in the Indoor patient Department of Obstetrics & Gynecology in Dhaka Medical College Hospital, Dhaka, Bangladesh from January to June 2015. Detailed information was obtained in each case according to protocol. Complete history was taken from patients and their accompanying attendants. Thorough clinical examination was done. Relevant investigations report was collected. Collected data was classified, edited, coded and entered into the computer for statistical analysis by using SPSS-19. ***Results:*** Out of 50 cases mean age was 24.56 (±4.71) years. Majority 27(54%) delivered by caesarean section and 23(46%) were delivered by normal vaginal delivery. Main indication for caesareansection25.93% fetal distress, 18.52%malpresentation, 18.52% previous LSCS and 37.03% severe Oligohydramnios. Prevalence of SGA babies (62%) is almost double than AGA babies (38%). Factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, post term pregnancy, fetal congenital anomalies were 16%,04%, 18%, 28%, 06%, 20% and 18% respectively. The Neonatal outcomes, including Low birth weight, IUGR babies, perinatal death, APGAR score< 7 at 5 min, admission in neonatal ward etc. Among 50 babies, low birth babies were 62%, APGAR score < 7 was found in 18% of babies, 26% babies were admitted in neonatal intensive care unit and 1 baby born with congenital anomaly (2%). ***Conclusion*****:** In conclusion factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, post term pregnancy, fetal congenital anomalies. Most of the pregnant women were borderline oligohydramnios. Various perinatal outcomes, including low birth weight, IUGR babies, perinatal death, APGAR score < 7 at 5 min, admission in neonatal ward.

Keywords: Amniotic Fluid (AF), Oligohydramnios, PIH.

INTRODUCTION

The amniotic fluid (AF) is a part of the baby's life support system. It aids in the development of muscles, limbs, lungs and digestive system. Amniotic fluid is produced soon after the amniotic sac is formed at about 12 days after conception. In normal pregnancies, the volume of amniotic fluid increases to about one literate 36 weeks which is the maximum level. Amniotic fluid volume rises progressively during gestation until 36 weeks; the mean amniotic fluid volume is relatively consistent in the level of 700-800 ml. After 40weeks there is a progressive decline of amniotic fluid volume at a rate of 8 % per week, with amniotic fluid volume averaging about 400ml at 42 wks. The clinical picture of reduced amniotic volume is termed oligohydramnios. Amniotic fluid can be measured by a few different methods, most commonly through Amniotic fluid index (AFI) evaluation or deep pocket measurements. If an AFI shows a fluid level less than 5cm (or less than the 5thpercentile), the absence of fluid pocket 2-3 cm in depth or a fluid volume less than 500 ml at 32-36 weeks of gestation, then a diagnosis of oligohydramnios would be suspected [1]. Oligohydramnios is associated with increased maternal complications, LBW babies, low APGAR score, congenital anomalies and perinatal morbidity and mortality [2]. The importance of amniotic fluid volume as an indicator of fetal wellbeing has made its assessment, an important part of antenatal fetal

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surveillance. It has been proposed that amniotic fluid possesses certain bacteriostatic properties that protect against potential infectious processes and that a decrease in amniotic fluid volume may impair the gravid woman's ability to combat such infections [3]. Despite decades of investigations, the regulation of amniotic fluid volume and composition remains incompletely understood. Decrease in amniotic fiuid volume which has been correlated with increased risk to the mother and fetus in utero. About 12% of women, whose pregnancies continue for two weeks beyond expected date of delivery, develop oligohydramnios due to declining placental function. Decreased amount of amniotic fluid, particularly in third trimester, has been associated with multiple fetal risks like, pulmonary hypoplasia and intrauterine growth restriction. Oligohydramnios may cause compression of umbilical cord, leading to fetal distress during labour.

MATERIALS AND METHODS

This was a cross-sectional observational study conducted in the Indoor patient Department of Obstetrics & Gynecology in Dhaka Medical College Hospital, Dhaka, Bangladesh from January to June 2015. Fifty cases included in your study. Detailed information was obtained in each case according to protocol. Complete history was taken from patients and their accompanying attendants. Thorough clinical examination was done. Relevant investigations report was collected. Antenatal patient in their third trimester with oligohydroamnios were included in Inclusion criteria.

Oligohydramnios:

Border line oligohydramnios was defined as an AFI between 5.1 to 8cm. Severe oligohydramnios was defined as an AFI≤5cm.Oligohydramnios was confirmed sonographically by measuring AFI. Amniotic fluid index was measured by four-quadrant technique by dividing the uterus in four quadrants. The measurements were summed in centimeter and the result was recorded as the amniotic fluid index (AFI). Gestational age at the time of delivery was recorded. Liquor was assessed at the time of rupture of membrane, during labour and at the time of caesarean section. Mode of delivery, APGAR score & neonatal birth weight was recorded. The subjects were studied for maternal and perinatal outcomes and other effect of Oligohydramnios.

DATA ANALYSIS

After collection, data editing and clearing was done manually and prepared for data entry and analysis by using SPSS version 17.

RESULTS

Table-1: Clinico-Social parameters of the study population (N=50)

	Number	Percentage
<20 yrs	02	04
20-25 yrs	33	66
26-30 yrs	11	22
>30 yrs	04	08
Total	50	100
Mean +SD	24.56 (t4.71)	Range 17-35 years
Mode of delivery		
Caesarean section	27	54%
normal vaginal delivery	23	46%
Gestational Age		
Appropriate for Gestational Age (AGSA)	19	38
Small for Gestational Age(SGA)	31	62

Table 1 shows mean age was 24.56 (14.71) years, minimum age was 17 years and maximum age was 35 yrs. Majority 27(54%) delivered by caesarean section and 23(46%) were delivered by normal vaginal delivery. The prevalence of SGA babies (62%) is almost double than AGA babies (38%).

Table-2: Indication of caesarean Section (N=27)

Indication of caesarean section	Number	Percentage
Fetal distress	07	25.93
Malpresentation	05	18.52
Previous LSCS	05	18.52
Sever Oligohydramnios	10	37.03

Table 2 shows main indication for caesarean section was 25.93% fetal distress,18.52% malpresentation,18.52% previous LSCS and 37.03% severe Oligohydramnios.

Table-3: Factor associated with oligohydramnios (N=50)

	Number	Percentage
PIH	09	18%
Malpresentation	05	10%
Chronic abruption	10	20%
Prolonged pregnancy	15	30%
Post term pregnancy	04	08%
Fetal congenital anomalies	02	4%
IUGR	09	18%

Table 3 shows factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, post term pregnancy. Fetal congenital anomalies and IUGR were 18%, 10%, 20%, 30%, 8%, 4% and18% respectively.

Table-4: Distribution of the patients as per the Neonatal illness (N=50)

	Number	Percentage
Low Birth Weight	31	62
IUGR	09	18
APGAR < 7 at 5 minutes	09	18
NICU Admission	13	26
Congenital anomaly	02	04

Table 4 shows the most common Neonatal illness were low birth babies were 62%, APGAR score<7 was found in 18% of babies, 26% babies were admitted in neonatal intensive care unit and congenital anomaly (4%).

DISCUSSION

In present study, mean age was 24.56 (±4.71) years, minimum age was 17 years and maximum age was 35 yrs. Rathod *et al*. [4] study showed mean maternal age was 23.7±6.7 standard deviation and all of these (55.71%) were between age group of 21-25 years and in Casey *et al*. [5] study mean maternal age was 23.9 years which were comparable to the present study. Magannetal [6] & Casey *et al*. [5] in their study shows that there was no significant relation of age with oligohydramnios. In present study, the majority 27(54%) delivered by caesarean section and 23(46%) were delivered by normal vaginal delivery. Sir Gangaram Hospital study [7] shows 68% vaginal deliveries in induced patients of Oligohydramnios and 32% by caesarean section which is comparable to our study. The caesarean section was done more commonly in 755 patients with non-reactive NST as seen in Jan dial study [8]. As these patients had oligohydramnios, a non- reactive NST + AFI <5 indicated fetal jeopardy as per revised Biophysical profile scoring by Clerk *et al*. [9] The fetal jeopardy was reflected as increase operative interference in this study. In current study, main indication for caesarean section (25.93%) fetal distress,18.52% malpresentation, 18.52% previous LSCS and 37.03% severe Oligohydramnios. Sowmya *et al*. [10] in patients with oligohydramnios, 50% underwent caesarean section for fetal distress, 26.47% for intrauterine growth restriction (IUGR) with doppler changes, 14.7% for failed induction. In present study showed factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, post term pregnancy, fetal congenital anomalies were 18%, 10%, 20%, 30%, 8%, 4% and 18%respectively. 82% pregnant women were borderline oligohydramnios and 18% were severe oligohydramnios. In present study, the Neonatal outcomes, including Low birth weight, IUGR babies, perinatal death, APGAR score < 7 at 5 min, admission in neonatal ward etc. Among 50 babies, low birth babies were 62%, APGAR score< 7 was found in 18% of babies, 26% babies were admitted in neonatal intensive care unit. Sarno *et al*. [11] noted a significantly higher rate of foetal distress and low APGAR score in women with AFI 5 cm. Golam *et al*. [12] reported low APGAR score at 5 minutes in 4.6% of babies in contrast to a figure of 18% noted by us. This difference in rates observed is because of better intrapartum foetal assessment facilities available in developed countries. In present study 62% of babies having Low birth weight (< 2.5 Kg) and mean birth weight was 2.26 kgwhich is comparable with study done by Ott *et al*. [13] Study done by Jandial *et al*. [8] and Akhetar *et al*. [14] showed that prevalence of LBW babies was 58.0% and60.0% respectively. The incidence of LBW babies is higher in Oligohydramnios expect in post maturity where the babies may have average birth weight.In present study, prevalence of SGA babies were 62% and AGA were 38%. In Philipson *et al*. [15] 60% AGA and 40% SGA. In Sariya *et al*. [16] 83.4% AGA and16.6% SGA. This high percentage of SGA babies suggesting correlation of IUGR with Oligohydramnios. In our study 26% of newborn required admission in NICU. While studies done by Jandialet al. [8] Akhetar *et al*.[14] and Jhonson *et al*. [17] rate of NICU admission was 16.0%, 10.0% and 20.0% respectively which were comparable to present study.

CONCLUSION

In conclusion factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, post term pregnancy, fetal congenital anomalies. Most of the pregnant women were borderline oligohydramnios. Various perinatal outcomes, including low birth weight, IUGR babies, perinatal death, APGAR score < 7 at 5 min, admission in neonatal ward.

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