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Original Research Article

"A Clinical Study on Maternal and Fetaloutcome of Oligohydroamnios in TMMCH, Bangladesh"

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Abstract: ***Background:*** Decrease in amniotic fluid is known as "Oligohydramnios". It is correlated with adverse maternal and perinatal outcomes in terms of intrauterine growth retardation, me conium aspiration syndrome, low birth weight, low APGAR scores, congenital anomalies and increase rate of caesarean deliveries. Early detection of Oligohydramnios and its management may help in reduction of maternal andperinatal morbidity and mortality. ***Objective:*** To find out maternal and fetal outcome of oligohydroamnios. ***Methods:*** This was a cross-sectional observational study conducted in the Indoor patient Department of Obstetrics & Gynecology in Tairunnessa Memorial Medical College and Hospital, Gazipur, Bangladeh from January 2016 to June 2016. The study was conducted in oligohydroamniotic patient admitted in the same ward. Fifty patients Included in your study. Complete history was taken from patients and their accompanying attendants. Thorough clinical examination was done. Relevant investigations report was collected. All the information was recorded in the fixed protocol. 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%) were primigravida and 23(46%) were multi gravida. Majority 27(54%) delivered bycaesarean section and 23(46%) were delivered by normal vaginal delivery. Mainindication for caesarean section 25.93% 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 Eighty two percents pregnant women were borderline oligohydramnios and 18% were severe oligohydramnios. Most of 88% patients had confirmed by ultrasonographically. The various perinataloutcomes, 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 wereadmitted in neonatal intensive care unit. Among 50 babies perinatal death (Stillbirth+Neonatal death) was 10% and 1 baby born with congenital anomaly (2%). ***Conclusion*****:** In conclusion majority delivered by caesarean section, main indication forcaesarean section was fetal distress, malpresentation, previous

LSCS and severe Oligohydramnios. Factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, Post term pregnancy, fetalcongenital anomalies. Eighty two percents pregnant women were borderline oligohydramnios. Various perinatal outcomes, including Low birth weight, IUGRbabies, perinatal death, APGAR score < 7 at 5 min, admission in neonatal ward. Perinatal death (Still birth+Neonatal death) was 10% and 1 baby born with congenital anomaly.

Keywords: Maternal and Fetal Outcome, Prevalence, Oligohydroamnios.

INTRODUCTION

Oligohydramnios is associated with higher incidence of pregnancy complication and adverse perinatal outcome in terms of morbidity and mortality. Oligohydramnios is frequent occurrence and demands intensive fetal surveillance and proper antepartum and intrapartum care [1]. Oligohydramnios is defined as a condition where the liquor amnii is deficient in amount to the extent of less than 200 ml at term [2]. About 8% of pregnant women can have low level of amniotic fluid, with about 4% diagnosed with 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 5th percentile), 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 [3]. Oligohydramnios is associated with increased maternal complications, LBW babies, low APGAR score, congenital anomalies and perinatal morbidity and mortality [4]. As we know water is very essential for human existence, same can applies to fetus in utero. Nature has made a floating bed in form of amniotic fluid cavity filled with liquor amnii for the requirement of fetus, for its existence and growth in sterile environment, regulation of temperature, avoidance of external injury and reduction of impact of contractions, so on and so forth. Amniotic fluid which surrounds developing fetus in amniotic sac provides several benefits to fetus [4]. The importance of amniotic fluid volume as an indicator of fetal wellbeing has made its assessment, an important part of antenatal fetal 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 [5]. Nazlima and Fatima [6] studied a prospective and observational study was conducted in a private specialized hospital at Dhaka city from January to December 2009. In this study 78 singleton pregnant females with gestational age from 28 - 42 weeks with less amniotic fluid index (AFI) were analyzed for perinatal outcome. Chavda *et al*. [7] studied 200 pregnant subjects between 20 and 42 weeks of gestation, who were clinically suspected to have an abnormal amniotic fluid volume (oligohydramnios polyhydramnios) subjected ultrasonographic (USG) assessment of amniotic fluid index. The subjects were closely monitored during pregnancy, labour and puerperium. Ultrasonically, abnormal liquor volume was confirmed in 90-93% clinically suspected patients. Post term pregnancy (39%), PROM (30%) and prolonged pregnancy (24%) were associated with oligohydramnios. The incidence of labour induction, fetal labour intolerance, CS for fetal distress and 1 min APGAR of <7 was high in oligohydramnios subjects. The overall incidence of congenital anomalies (14%) and perinatal mortality (20%) in subjects with abnormal liquor volume was significantly higher (P<0.001) than in women with normal liquor volume (0.3, 2.3% respectively). A good clinical examination can pick up most subjects of abnormal liquor volume. Abnormal liquor volumes are associated with increased maternal morbidity and adverse perinatal. 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. Oligohydramnios is found to be associated with an increased risk of caesarean delivery for fetal distress, low APGAR score, meconium staining, congenital anomalies, growth retardation, dysmaturity and fetal asphyxia and high perinatal morbidity and mortality [8]. Many studies have been showed that maternal & perinatal outcome is significantly affected by low amniotic fluid volume (Oligohydramnios) during pregnancy.

Therefore Increase induction of labour and elective cesarean deliveries are currently practiced for better perinatal outcomes. Early detection of Oligohydramnios and its management may help in reduction of maternal complication as well as perinatal morbidity and mortality associated with oligohydramnios.

MATERIALS AND METHODS

This was a cross-sectional observational study conducted in the Indoor patient Department of Tairunnessa Memorial Medical College and Hospital, Gazipur, Bangladeh from January 2016 to June 2016. The study was conducted in oligohydroamniotic patient admitted in the same ward. Fifty patients 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. All the information was recorded in the fixed protocol. Collected data was classified, edited, coded and entered into the computer for statistical analysis by using SPSS-19.

Inclusion criteria

- Antenatal patient in their third trimester with oligohydroamnios wereincluded for study purpose.
- Patients of oligohydroamnios.

Exclusion criteria

- Patients with rupture amniotic membranes.
- Patients with fetus having congenital anomalies like renal agencies.polycystic kidneys.
- Patients with multiple gestations.
- Patients with previous LUCS, myomectomy.
- Patients of oligohydroamnios who will not provide consent.

Oligohydramnios

Border line oligohydramnios was defined as anAFI between 5.1 to 8cm. and severe oligohydramnios was defined as an AFI≤5cm. The patients would be interviewed face to face by the researcher for thepurpose of collection of data.Then the patients would be examined by the researcher for certain signs andthose would be recorded in the check-list. Oligohydramnios was confirmed sonographically by measuring AFI. Amnioticfluid index was measured by four-quadrant technique by dividing the uterusin four quadrants. The measurements were summed in centimeter and theresult was recorded as the amniotic fluid index (AFI). Gestational age at thetime of delivery was recorded. Liquor was assessed at the time of rupture of membrane, during labour and at the time of caesarean section. Mode ofdelivery, APGAR score & neonatal birth weight was recorded. The subjectswere studied for maternal and perinatal outcomes and other effect of Oligohydramnios.

DATA ANALYSIS

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

RESULTS

Out of 50 cases mean age was 24.56 (14.71) years, minimum age was 17 years and maximum age was 35 yrs. shows table 1. Figure 1 shows majority 66% of the mother came from lower class socio-economic conditions, 30% mother came from middle class soci0-economiCstatus and 04% mother came from upper socio-economic conditions.

Table-1: Age group distribution of the study population.

	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

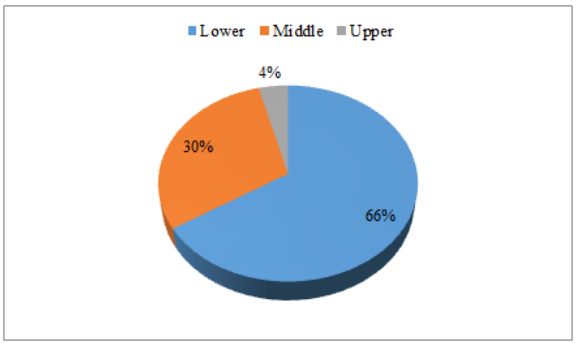

Fig-1: Socio-economic status of the study population.

Table-2: Gravidity of the study population.

	Number	Percentage
Primigravida	27	54
Multi gravida	23	46
Total	50	100

Table 2 shows majority 27(54%) were primigravida and 23(46%) were multigravida. Figure 2 shows majority 27(54%) delivered by caesarean section and 23(46%) were delivered by normal vaginal delivery.

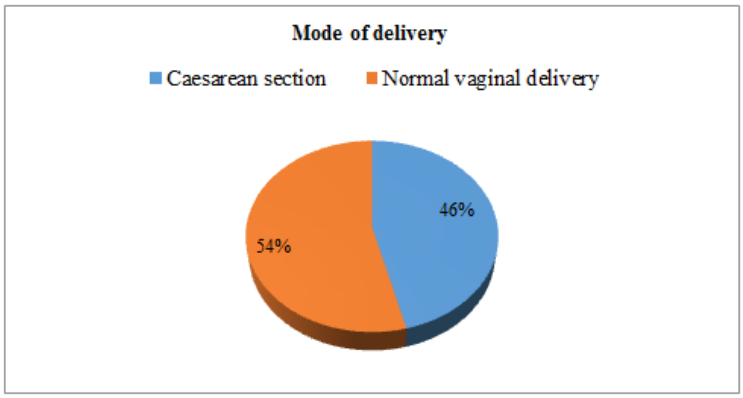

Fig-2: Mode of delivery of the study population.

Table-3: Distribution of Newborn according to their gestational age Gestational Age.

	Number	Percentage
Appropriate for Gestational Age (AGSA)	19	38
Small for Gestational Age(SGA)	31	62
Total	50	100

Table 3 shows that prevalence of SGA babies (62%) is almost double than AGAbabies (38%).

Table-4: Ultrasound confirmation.

USG	Number	Percentage
Confirmed	44	88
Not confirmed	06	12
Total	50	100

Table 4 shows most of 88% patients had confirmed by ultrasonographically and12% patients not confirmed by USG but suspected clinically (by physical examination and assessment during delivery).

Table-5: The various perinatal outcomes in patients with Oligohydramnios Outcomes.

	Number	Percentage
Low Birth Weight	31	62
IUGR	09	18
Still Birth	04	08
Neonatal Death	01	02
APGAR < 7 at 5 minutes	09	18
NICU Admission	13	26
Congenital anomaly	02	04

Table 5 shows the various perinatal outcomes, including Low birth weight, IUGR babies,still birth, Neonatal death, APGAR score <7 at 5 min, admission in neonatal ward etc. Among 50 babies, low birth babies were 62%, APGARscore<7 was found in 18% of babies, 26% babies were admitted in neonatal intensive care unit Among 50 babies' perinatal death (Still birth +Neonatal death) was 10% and 02 baby born with congenital anomaly (4%).

DISCUSSION

Oligohydroamios is associated with high risk adverse perinatal outcomes. On the other hand, oligohydroamnios is a poor predictor of adverse perinatal outcomes. But it is often used as an indicator for delivery. So assessment of amniotic fluid volume in antenatal is a helpful tool in determining who is at risk for potentially adverse perinatal outcome. 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.* [1] study showed mean maternal age was 23.7±6.7 standard

deviation and all of these (55.71%) are between age group of 21-25 years and in Casey *et al*. [9] study mean maternal age was 23.9 years which were comparable to the present study. Magann *et al*. [10] & Casey *et al*. [9] in their study show that there was no significant relation of age with oligohydramnios. In this study, majority 27(54%) were primi gravida and 23(46%) were multigravida. Nazlima and Fatima [6] study showed mean age of the patients was 24.58 ±3.99 SD and of all these 46.15% were between 21- 25 years. 36% patients were nulliparous and 64% patients were multiparous, In Petrozella *et al*. 21 the incidence of oligohydramnios was 60% in primigravida which is comparable to Jagatia *et al*. [4] study as it was 52% which were comparable to present study. In present study, the majority 27(54%) delivered by caesarean section and 23(46%) were delivered by normal vaginal delivery. Sir Gangaram Hospital study [11] 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 Jandial study.[12] As these patients had oligohydramnios, a non-reactive NST + AFI < 5 indicated fetal jeopardy as per revised Biophysical profile scoring by Clerk *et al*. [13] The fetal jeopardy was reflected as increase operative interference in this study. In present study, the various perinatal 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. Among 50 babies perinatal death (Still birth+Neonatal death) was 10% and 02 baby born with congenital anomaly (4%). Sarno *et al.* [14] noted a significantly higher rate of foetal distress and low APGAR score in women with AFI 5 cm. This may due to head or cord compression. Golam *et al*. [15] 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. Oligohydramnios is recognized as a clinical hallmark of impending severe perinatal compromise. We have found 10% perinatal deaths (8 still birth and 2 neonatal deaths).Where as studies done by Jandial *et al*. [12] and Casey *et al.* [9] perinatal death was 10.0% and 6.4% respectively. In present study 62% of babies having Low birth weight (< Kg) and mean birth weight was 2.26 kg which is comparable with study done by Ott *et al*. [16] Study done by Jandial *et al*. [12] and Akhetar *et al*. showed that prevalence of LBW babies was 58.0% and 60.0% 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.* [17] 60% AGA and 40% SGA. In Sariya *et al*. [18] 83.4% AGA and 16.6% SGA. This high percentages of SGA babies suggesting corelation of IUGR with Oligohydramnios. In our study 26% of newborn required admission in NICU. While studies done by Jandial *et al.* [12] Akhetar *et al*. [19] and Jhonson *et al.* [20] rate of NICU admission was 16.0%, 10.0% and 20.0% respectively which were comparable to present study.

CONCLUSION

In conclusion majority delivered by caesarean section, main indication forcaesarean section was fetal distress, malpresentation, previous LSCS and severe Oligohydramnios. Factor associated with oligohydramnios were PIH, malpresentation, chronic abruption, prolong pregnancy, Post term pregnancy, fetalcongenital anomalies. Eighty two percents pregnant women were borderline oligohydramnios. Various perinatal outcomes, including Low birth weight, IUGRbabies, perinatal death, APGAR score <7 at 5 min, admission in neonatal ward. Perinatal death (Still birth+Neonatal death) was 10% and 1 baby born withcongenital anomaly.

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