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PERINATAL OUTCOME IN OLIGOHYDRAMNIOS

Obstetrics & Gynaecology

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ABSTRACT

Aims and objective: This study was done to assess the perinatal outcome and the rate of caesarean section when the amniotic fluid index was < 5. **Design:** This was a prospective study done during June 2018 to June 2020 on patients admitted in labour room emergency of PMCH, Patna , Bihar, India. 200 patients admitted during 3rd trimester with singleton pregnancy having AFI < 5 were selected for the study. Another 200 patients having normal AFI (5-24) were kept as control.**Result:** In group 1, 58% patients were found to be nulliparous.R ate of caesarean section was 39.5% in group 1 and 37% in group 2 but caesarean section due to fetal distress was 23% in group 1 compared to only 12.5% in group 2. Abnormal fetal heart rate was 28.5% in group 1as compared to only 13% in group 2. Birth weight < 2.5 kg was seen to be 43.5% in group 1 compared to 19% in group 2. **Conclusion:** Oligohydramnios is associated with adverse perinatal outcome and increased rate of caesarean section due to fetal distress.

KEYWORDS

AFI < 5 – Adverse Perinatal Outcome.

INTRODUCTION

Amniotic fluid protects the fetus from external trauma by acting as shock absorber, it maintain an even temperature, allows intrauterine growth and free movement of the fetus and it prevents adhesion between fetal parts and amniotic sac. During labour it helps in dilatation of cervix as well as prevents interference with the placental circulation and umbilical cord compression during uterine contraction. Volume of amniotic fluid is assessed by amniotic fluid index (AFI). Maternal abdomen is divided into 4 quadrants, in USG the largest vertical pocket in each maternal quadrant is measured in cm, sum of the 4 measurement in cm represent AFI. Sonographically oligohydramnios is the condition where AFI is < 5 cm or when the maximum vertical pocket of liquor is < 2 cm. AFI < 5 cm is considered abnormal for gestational age 28-40 weeks, AFI between 5 and 8 is termed borderline. Oligohydramnios is associated with uteroplacental insufficiency and in this condition there is a risk of cord compression during labour, therefore it affects the perinatal outcome adversely. Oligohydramnios can cause congenital deformity, fetal pulmonary hypoplasia, abnormal FHR, fetal distress, fetal morbidity and fetal mortality.

AIMS AND OBJECTIVE

This study was done to assess the perinatal outcome and the rate of caesarean section when AFI was < 5 cm

MATERIAL AND METHOD

This was a prospective study done during June 2018 to June 2020 on patients admitted in labour room emergency of **PMCH, Patna, Bihar, India**. 200 patients admitted during 3rd trimester with singleton pregnancy having AFI < 5 cm were selected for the study – Group 1. Another 200 patients having singleton pregnancy with normal AFI (between 5- 24) were kept as control – Group 2. In this study we excluded cases like malpresentation, diabetes, multiple pregnancy, premature rupture of membrane, antepartum haemorrhage, Rh incompatibility. Detailed history of the selected patients regarding age, demographic profile, menstrual history, obstetrical history, family history, medical or surgical history were taken. Their general examination and obstetrical examination was done. Pelvic assessment , fetal heart rate monitoring and bishop scoring was done. Data was analyzed according to age, parity, mean gestational age at delivery, mode of delivery (vaginal delivery or caesarean section), baby birth weight, Apgar score at 1 minute and 5 minute, still birth, NICU admission and early neonatal death.

Following routine investigation were done-

- ABO typing, Rh typing
- CBC with platelet count
- Routine examination of urine
- Random blood suger
- HIV 1&2, HBsAg, HCV
- USG for fetal well being and gestational age, amount of liquor (if patient was not in active labour)
- RFT, LFT and coagulation profile in case of caesarean section.

RESULTS

200 patients with AFI < 5 and 200 patients with AFI (5 to 24) were studied

Table 1 – Demographic profile

		Group 1 (AFI < 5) No of patients- 200	Group 2 (AFI 5-24) No of patients - 200
Maternal age (Yrs)		21.5	21.8
Mean gestational age (week)		38.65	38.68
Parity	0	58%	53.5%
	1	18.5%	21%
	2	9%	10.5%
	3	7.5%	8.5%
	>/= 4	7%	6.5%

Above table shows that mean maternal age in group 1 was 21.5 years and in group 2 was 21.8 years, mean gestational age in group 1 was 38.65 weeks and in group 2 was 38.68 weeks. In group 1, 58% patients were nulliparous and in group 2, 53.5% patients were nulliparous .

Table 2- Mode of delivery

	Group 1 (AFI < 5) No of patients - 200	Group 2 (AFI 5-24) No of patients – 200
Caesarean section	39.5%	37%
Caesarean section due to fetal distress	23%	12.5%

Above table shows that caesarean section was done in 39.5% group 1 patients and 37% of group 2patients showing that there was no significant difference but caesarean section dueto fetal distress was 23% in group 1 compared to only 12.5% in group 2

Table 3 – Perinatal outcome

	Group 1 (AFI< 5) No of patients- 200	Group 2 (AFI 5-24) No of patients- 200
Abnormal fetal heart rate	28.5%	13%
Meconium stained liquor	26%	18%
APGAR SCORE	23%	11%
· 1 min < 7	12%	10.5%
· 5 min < 7		
Birth weight < 2.5 kg (LBW)	43.5%	19%

Still birth	1.5%	1%
NICU admission	31%	17%
Early neonatal death	3%	2%

Abnormal fetal heart rate was observed in 28.5% patients in group 1, compared to only 13% in group 2, similarly meconium stained liquor was seen in 26% of group 1 and 18% of group 2 patients.

1 minute APGAR SCORE <7 was seen in 23% of group 1 and 11% of group 2 newborn showing significant difference but 5 min APGAR SCORE < 7 was 12% in group 1 and 10.5% in group 2 neonates which showed that the difference was not much significant.

DISCUSSION

- In this study mean maternal age in the oligohydramnios group was 21.5 year which is similar to mean maternal age of 22.8 +/- 4.2 years in a study done by Bangal et al.
- Mean gestational age in AFI < 5 cm group was 38.65 weeks. In a study done by Bangal et al mean gestational age was found to be 36.7 +/- 4.1 weeks. This shows that oligohydramnios is more common in 3rd trimester of pregnancy.
- In this study 58% of oligohydramnios patients were nulliparous whereas in the control group only 53.5% patients were nulliparous which shows that oligohydramnios is more common in nulliparous. In a study done by Jagatian Krishna et al in 2013 they found that oligohydramnios was more among nulliparous (52%) Locatelli et al in 2004 also found that oligohydramnios was more common in nulliparous. Similar results were found by Bhagat et al who found 68% oligohydramnios patients were nulliparous.
- In this study caesarean section was done in 39.5% of group 1 and 37% of group 2 patients which showed no significant difference but rate of caesarean section due to fetal distress was 23% n group 1compared to 12.5% in group 2 showing significant difference. These finding were similar to results reported by Chauhan et al.
- Abnormal fetal heart rate was higher 28.3% in group 1 compared to 13% in group 2. Bhagat at el in their study on correlation of amniotic fluid index with perinatal outcome got similar results. Meconium stained liquor was higher 26% in group 1 compared to 18% in group 2 patients, study conducted by Baron et al showed no difference in meconium stained liquor in both group.
- In this study 1 minute APGAR score < 7 was seen in 23% in group 1 compared to 11% in group 2 newborn showing significant difference but 5 min APGAR score < 7 was similar i.e. 12% in group 1 and 10.5 % in group 2. Bangal et al reported 5 min APGAR score < 7 in 3.8% babies in oligohydramnios versus 4.6% in normal AF I g roup concluding that there is no significant difference
- LBW (< 2.5 kg) was higher (43.5%) in group 1 compared to 19% in group 2 .Stillbirth was 1.5% in group 1 and 1% in group 2
- NICU admission was required in 31% of group 1 newborn compared to 17% of group 2 newborn. Brain et al found NICU admission 7% compared to 2% in respective groups
- Early neonatal death was higher i.e. 3% compared to 2% in group 2 newborn.

CONCLUSION

Oligohydramnios is associated with adverse perinatal outcome and increased rate of caesarean section due to fetal distress. Incidence of LBW is high when AFI is < 5. 1 minute APGAR score < 7 is seen more in oligohydramnios compared to normal AFI and these neonates require more NICU admission and have higher mortality.

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