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RESEARCH ARTICLE

A STUDY OF OLIGOHYDRAMNIOS AT TERM ON MATERNAL AND FETAL OUTCOME.

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Key words:-
Oligohydramnios; Amniotic fluid; fetal distress; Meconium aspiration syndrome.

Abstract

Objectves: (1) To study the effect of oligohydramnios on maternal outcome in terms of vaginal delivery or caesarean section. (2) To study the effect of oligohydramnios on fetal outcome in terms of Apgar score, NICU admission, birth weight and perinatal death.
Methods: A prospective study conducted from January 2017 to July 2017 at Govt. Lalla Ded Hospital in Srinagar, Kashmir, where 100 patients with oligohydramnios were recruited and studied for maternal and perinatal outcome after meeting inclusion and exclusion criteria.
Results: Majority of the patients were in the age group of 25-29. Incidence of oligohydramnios was more in primigravida. Most common cause was idiopathic (65%) followed by PIH (24%). NST was reactive in 62% and nonreactive in 38%. 18% patients delivered vaginally and 82% by caesarean section with most common indication being fetal distress.
Conclusion: Oligohydramnios is associated with adverse perinatal outcome and increased maternal morbidity in terms of operative interference. Thus, proper antepartum surveillance and timely intervention is needed for better results.

Introduction:-

Amniotic fluid serves to protect the fetus and umbilical cord from compression, has antibacterial properties, serves as a reservoir of water and nutrients and provides the necessary condition for normal development of fetal lung, musculoskeletal and gastrointestinal system. In human pregnancy, amniotic fluid increases dramatically during first two trimesters from 20 ml at 10 weeks to an average of 770ml – 1000 ml at 28 weeks after which the value changes little till 39 weeks and declines after that. (1) Decrease in amniotic fluid or oligohydramnios is a common complication of pregnancy and its incidence is reported to be around 1 – 5 % of total pregnancies. (2) Phelan defined oligohydramnios as AFI[1] of less than 5 cms. (3) Decrease in amniotic fluid volume has been correlated with increased risks of IUGR, meconium aspiration syndrome, severe birth asphyxia, low apgar scores and congenital abnormalities. (4) Oligohydramnios is associated with maternal morbidity in form of increased risk of induction of labour and operative interference. (5)

Aims and Objectives:-

1. To study the effect of oligohydramnios on maternal outcome in terms of vaginal delivery or caesarean section.

[1] Amniotic fluid increase

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2. To study the effect of oligohydramnios on fetal outcome in terms of Apgar score, NICU admission and birth weight and perinatal death.

Methodology:-

This prospective study was conducted at Lalla Ded Hospital associated with GMC, Srinagar, over a period of 6 months from January 2017 to July 2017. A total of 100 patients meeting the inclusion and exclusion criteria were recruited for this study.

Inclusion criteria:-

1. Singleton pregnancy with gestational age >37 weeks with intact membranes.
2. Oligohydramnios (AFI<5cms)

Exclusion criteria:-

1. Multiple pregnancy.
2. Polyhydramnios.
3. Premature rupture of membranes
4. Fetal congenital malformation.
5. Gestational age <37 weeks

Detailed history was taken and examination done after proper consent. Both booked and unbooked cases were included in the study. All baseline and required investigations were done. Oligohydramnios was confirmed by measuring AFI with ultrasound. Fetal surveillance was done by NST and Biophysical profile. Cases were then studied for maternal and fetal outcome.

Results:-

In our study 40% of the patients were between 20-24 year age group and 56% between 25-29 years with majority being between 20-29 yrs. The mean maternal age was 25.4 years. 76% of the patients were booked and 24% were unbooked. Primigravidas constituted 48% of the cases, para 1=24%, para 2=18% and para 3 or more=10%. [Table I]

Table 1:- Demographic data of patients

	NUMBER
Age group	
20 - 24	40 (40%)
25 - 29	56 (56%)
30 - 34	4 (4%)
Mean age (yrs); Range	25.4; (25-36 yrs)
Booked	76 (76%)
Unbooked	24 (24%)
Primigravida	48 (48%)
P_1	24 (24%)
P_2	18 (18%)
P_3 or more	10 (10%)

The most common cause of oligohydramnios in our study was idiopathic (65%), followed by PIH in 24%, 40-42 weeks prgnancy in 8% and breech presentation in 3%. [Table II]

Table 2:-Associated Risk Factors

RISK FACTORS	NO	PERCENTAGE
Idiopathic	65	65%
PIH	24	24%
40-42 weeks pregnancy	8	8%
Breech	3	3%

As shown in Table III, the NST was reassuring in 62% and non-reassuring in 38%. Out of the 100 patients 18% had vaginal delivery with no case of instrumental delivery and 82% had caesarean section, [Table IV] fetal distress being the most common indication for caesarean section (51.2%), followed by IUGR with oligohydramnios (24.41%), breech presentation with oligohydramnios (7.31%), failure of induction in 4.89% and CPD in 12.19%. [Table V]

Table 3:- Non-stress test.

Reactive	52	52%
Non-reactive	48	48%

Table 4:- Maternal outcome

MATERNAL OUTCOME	NO	PERCENTAGE
Vaginal delivery	18	18%
Instrument delivery	0	0%
Caesarean section	82	82%

Table 5:- Indication for caesarean section

INDICATION	NO	PERCENTAGE
AFD	42	51.2%
IUGR with oligohydramnios	20	24.41%
Breech with oligohydramnios	6	7.31%
Failure of induction	4	4.89%
CPD	10	12.19%

Table 6:- Fetal outcome.

INDICATION	NO	PERCENTAGE
Apgar score at 1 min		
< 7	20	20%
> 7	80	80%
NICU admission		
No	88	88%
Yes	12	12%
Birth weight		
< 2 kg	6	6%
2 – 2.5 kg	48	48%
2.6 – 3 kg	27	27%
> 3 kg	8	8%
Neonatal death	1	1%

As illustrated in Table VI, majority of the neonates were between 2–2.5 kg (48%), followed by 27% between 2.6–3 kg, 6% less than 2 kg and 8% more than 3 kg. Only 12% of the neonates required NICU admission with RDS[2] (50%) being the most common cause of NICU admission, followed by MAS[3] (25%) and LBW[4] (25%). 80% of the neonates had apgar score of >7 at 1 min and only 20% had <7 at 1 minute after birth. One case of perinatal death was seen who died after 2 days of MAS.

Table 7:- Cause of NICU admission

CAUSE	NO	PERCENTAGE
Respiratory distress syndrome	6	50%
Meconium aspiration syndrome	3	25%
LBW	3	25%

Discussion:-

In this study 100 patients with AFI <5 cms and gestational age >37 weeks admitted to LD hospital were recruited and studied for maternal and fetal outcome. Majority of the patients were between 20 – 25 years of age .In our study Oligohydramnios was found to be high in primigravida group (48%) which is similar to the study of **Krishna Jagatia et al.** (4) In this study no maternal mortality was seen but oligohydramnios was associated with increased rate of induction of labour and operative interference (caesarean section in 58%) .**82**% of the patients had caesarean

[2] Respiratory distress syndrome
[3] Meconium aspiration syndrome
[4] Very low birth weight

section in our study unlike other studies .This could be explained by the huge patient load and inadequate fetal surveillance during labour in our setup.[7] The most common indication of caesarean section was fetal distress (51.12%). In contrast to our study, the rate of caesarean section in oligohydramnios in US as observed in a study done by Kolsoum et al is 20.2% which explains the sophistication of obstetric health care in their set up. NST was reactive in 52% and non-reactive in 48% of the cases. Out the 48 non reactive NST cases 12 had associated PIH, 4 had gestational age of 40-42 weeks and 26 cases were idiopathic. Similar finding was obtained in the study of **Ghike et al.** [8] Majority of the neonates had birth weight between 2-2.5 kg (48%)]. 20% of the neonates had apgar score<7 at 1 minute of birth. This compares favourably to the study of **Manning et al.** [10] and 12% required NICU admission which is similar to the findings of **Julie M Jhonson**. [11] Only one case of neonatal death was seen where the baby died after 2 days of MAS.

Conclusion:-

Amniotic fluid volume assessment is one of the important components of Biophysical profile and an important tool in antepartum fetal surveillance to predict the perinatal outcome. Adverse perinatal outcome is seen in higher percentage of patients having oligohydramnios. Due to increased risk of neonatal complications in severe oligohydramnios the rate of caesarean section is also increasing but decision between vaginal delivery and caesarean section should be well balanced to prevent unnecessary maternal morbidity.

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