

Study of Obstetric Outcome in Oligohydramnios

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I. Introduction

Amniotic fluid provides a protected milieu for the growing fetus, cushioning the fetus against mechanical and biological injury, supplying nutrients, and facilitating growth and movement.

The quantity of amniotic fluid increases from 25 ml at 10 weeks to about 400ml at 20 wks and volume increases to about 800 -1000ml at 28 wks, plateaus near term and declines to about 400ml at 42 wks¹.

Decrease in amniotic fluid or oligohydramnios² is frequent occurrence in women attending antenatal clinic. It has been correlated with increased incidence of meconium staining³, abnormal fetal heart patterns, severe birth asphyxia, congenital abnormalities, APGAR score less than 7, increased NICU admission, increased neonatal morbidity and mortality. Oligohydramnios is also associated with maternal morbidity in form of increased rates of induction of labour and operative delivery⁴. There is also current practice of increased caesarean delivery in order to improve perinatal outcome. Early detection and management of oligohydramnios helps in reduction of perinatal morbidity and mortality.

II. Materials Methods

Present study was done over a period of 12 months. 138 cases in 3rd trimester of pregnancy with oligohydramnios selected randomly after satisfying inclusion and exclusion criteria.

Inclusion criteria – Antenatal patients in third trimester

Exclusion criteria:

- Antenatal patients with heart disease, renal disease.
- Polyhydramnios.
- Twins.

Study was conducted to observe obstetric and fetal outcome like:

- To study effects of oligohydramnios on fetus in form:
- IUGR
- Fetal distress
- NICU admission APGAR <7
- To study early neonatal morbidity and mortality
- To study maternal morbidity in form of induction of labour or operative delivery or caesarean delivery.

Regular antenatal examination was done. All required investigations done. Oligohydramnios confirmed by measuring AFI with transabdominal USG, AFI < 8 was considered as Oligohydramnios.

Fetal surveillance was monitored by daily fetal movement count, alternative twice weekly NST, modified biophysical profile. Growth scan and Doppler study were done when necessitated.

Decision of delivery by either induction or elective or emergency caesarean was done based on findings and as per standard protocol. Maternal and perinatal outcome was noted.

III. Results

In our study 62% of patients were in age group 20-25yrs and 21% of patients in age group 26-30yrs with 8% of patients of age group >30yrs(Table 1). Affected equally among Primi and multigravidas ,52% patients were primigravida and 48% were multigravida with oligohydramnios (Table 2).

Table 1: Age and Maternal outcome of labour

Age(yrs)	Vaginal Delivery	Caeserean Delivery	t o t a l
< 20	4 (4 0 %)	6 (6 0 %)	1 0
20-25	14 (1 6 . 4 %)	7 2 (8 3 . 7 %)	8 6
26-30	6 (2 0 %)	2 4 (8 0 %)	3 0
> 30	2 (1 6 %)	1 0 (8 4 %)	1 2
			1 3 8

Table 2: Parity and maternal outcome of labour

P a r i t y	Vaginal delivery	Caesarean delivery	t o t a l
P r i m i	14 (20%)	58 (80%)	72
M u l t i p a r a	40 (60%)	26 (40%)	66
			138

Table 3: Associated condition and maternal outcome of labour

c o n d i t i o n	Vaginal delivery	Caesarean delivery	T o t a l
Gestational hypertension	0	2	4
P R O M	0	1	2
P r e - e c l a m p s i a	0	6	6
R h n e g a t i v e	0	0	6
S L E + A P L A	0	0	1
I d i o p a t h i c	1	8	7
			38

Table 4:Doppler study and maternal outcome of labour

D o p p l e r s t u d y	Vaginal delivery	Caesarean delivery	T o t a l
N o r m a l	25 (20%)	101 (80%)	126 (92%)
A b n o r m a l	0	1 (9%)	1 (8%)
			38

Table 5: Indications of caesarean section

F e t a l d i s t r e s s	2	7	7	%
B r e e c h	3		5	%
F a i l e d I n d u c t i o n	5	0		%
F e t o p l a c e n t a l i n s u f f i e n c y	1	0		%
O t h e r s	2			%

Table 6: outcome of labour

G r o w t h r e t a r d a t i o n	A G A - 108	S G A - 30
A P G A R s c o r e < 7	1	8
N I C U a d m i s s i o n	3	0

Table 7:Perinatal outcome

L i v e b o r n	1	32	(95%)
S t i l l b o r n	0	6	(5%)
T o t a l	1	3	8

In our study the incidence of caesarean was highest in age group of 20-25yrs and mean maternal age is 24yrs (Table 1). The incidence of oligohydraminos and operative morbidity was highest in primi (80%) (Table 2). Most common cause for oligohydraminos was idiopathic (65%) followed by hypertensive disorders in pregnancy (20%) (Table 3). 80% of isolated oligohydraminos were delivered by caesarean delivery. All patients with oligohydraminos were subjected to Doppler study. 8% patients were found to have abnormal Doppler changes like fetoplacental insufficiency(Table 4). 91% of patients who had abnormal Doppler changes were delivered by caesarean section proving increased operative morbidity⁵. The most common indication to perform caesarean delivery was fetal distress (27.7%) followed by IUGR (13.7%) to reduce perinatal morbidity and mortality.

Oligohydraminos was related to higher incidence of APGAR score less than 7 (13.6%) and NICU admission (27.7%) in our study(Table 6). There were 4 cases of congenital anomalies in our study. There were 6 cases of still born(Table 7) in our study due to fetoplacental insufficiency secondary to pre-eclampsia and congenital anomalies.

IV. Discussion

In our study mean maternal age was 24yrs which was comparable to Casey et al⁶ study. The incidence of oligohydraminos was 52% in primigravida which is comparable to Donald D et al⁷ study.

In present study 81% of patients with oligohydraminos underwent operative delivery for various indications but the most common being fetal distress and abnormal Doppler changes. Oligohydraminos,IUGR,PROM perse were not the indications for caeserean delivery. These cases were induced forlabour and underwent cesarean delivery because of failed induction. The incidence of cesarean delivery was

higher in our study as our hospital is a tertiary centre and had high number of referral cases and our institute follows liberal cesarean considering better fetal outcome. The incidence of oligohydraminos in Rh negative pregnancy is explained by increased association of preeclampsia and all the cases being primigravida where in the immune sensitization would have not set in still. 39% patients delivered had low birth weight < 2.5kg and mean birth weight was 2.3kg which is similar to study conducted by William Ott Et al⁸ with the mean birth weight of 2.4kg. The incidence of low birth weight babies is higher in oligohydraminos except in post maturity where babies had average birth weight.

In Manning Et Al⁹ 64% AGA and 36% SGA which is comparable to our present study- 78% AGA and 22% SGA. This high percentage of SGA babies suggests correlation of IUGR with oligohydraminos. This is comparable with the study of chamberlain and co workers¹⁰ that the incidence of fetal growth restriction with oligohydraminos.

In Manning Et Al⁹ 15% babies had APGAR score less than 7 which is comparable to our study i.e., 13.6% and 27% had NICU admission. 5% patients of oligohydraminos have neonatal death as observed in study.

V. Conclusion

Oligohydraminos is frequent occurrence which demands antepartum, intrapartum and fetal surveillance. Oligohydraminos is a frequent finding in pregnancy involving hypertensive disorders, IUGR, PROM and post maturity. Amniotic fluid volume indicates fetal well perfused kidneys and predicator of fetal tolerance. Oligohydraminos is associated with increased incidence of meconium staining, caesarean delivery for fetal distress, abnormal fetal heart pattern. Due to intrapartum complications the incidence of caesarean delivery is rising in order to reduce perinatal morbidity and mortality Timely intervention has to be taken in cases of oligohydraminos to prevent maternal morbidity and can reduce perinatal morbidity and mortality.

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