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Original Research Article

A study of maternal and fetal outcome in third trimester diagnose case of oligohydramnios

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ABSTRACT

Background: Oligohydramnios is defined as when the maximum vertical pockets of liquor is less than 2 cm or when AFI is less than 5 cm or less than 10th centile. Amniotic fluid is part of the baby" life support system during labour so the purpose of this study is evaluate maternal and perinatal outcome in present study.
Methods: 150 patients with third trimester diagnosed case of oligohydramnios were included and were screened through exclusion and inclusion criteria.
Results: Oligohydramnios was more in primipara in our study. It was increase in case of prolonged pregnancy. 66% were of moderate AFI and 29% were severe oligohydramnios. Idiopathic was most common cause, and .second cause was PIH. Oligohydramnios was related to higher rate of IUGR and NICU admission.
Conclusions: Now a day oligohydramnios is most common occurrence in pregnant women. Amniotic fluid volume is a predictor of fetal tolerance in labour and its decrease is associated with increased perinatal morbidity and mortality, rates of caesarean section are rising. Take timely intervention can reduce perinatal morbidity and mortality. Vaginal delivery and caesarean section should be well balanced so that unnecessary maternal morbidities prevented and improve labour outcome.

Keywords: Oligohydramnios, AFI perinatal morbidities, Maternal outcome

INTRODUCTION

Oligohydramnios is defined as when the maximum vertical pockets of liquor is less than 2 cm or when AFI is less than 5 cm or 10th centile.[1-3] Amniotic fluid is part of the baby" life support system during labour.[2] The most important mechanical function of amniotic fluid is to provide an adequate cushion for the umbilical cord. Without this cushion, compression of the cord between the fetus and the uterine wall may occur during contractions or fetal movement. This cord compression lead to severe FHR decelerations which are associated with low APGAR scores and acidosis at birth, meconium staining, cesarean section and operative vaginal delivery for fetal distress

Oligohydramnios is also associated with maternal morbidity in form of increased rates of induction and/ or operative interference. Amniotic fluid index" was described by Phelan et al.[1-3] It is the most accurate method for assessing amniotic fluid volume and helps to categorize the patients into normal, low normal and oligohydramnios groups. Increased induction of labour and elective caesarean deliveries are currently practiced for better perinatal outcome. Early detection of oligohydramnios and its management may help in reduction of perinatal morbidity and mortality one side and decreased caesarean deliveries on the other side. Since oligohydramnios has got significant impact on perinatal outcome and maternal morbidity, oligohydramnios is a severe and common complication of

pregnancy and the incidence of this is reported to be 3.9% of total pregnancies. Oligohydramnios in the third trimester of pregnancy has been associated with intrauterine growth restriction, post-dated pregnancy, congenital anomalies, increased fetal morbidity and abnormal antepartum fetal heart rate pattern, it is prompted us to study the maternal and perinatal outcome third trimester diagnosed case of oligohydramnios.[4]

METHODS

The present study was conducted in the Department of Obstetrics & Gynaecology, M.G.M. Medical College Indore (M.P.), India during the period from February 2014-March 2015, 150 cases of oligohydramnios in third trimester selected after satisfying inclusion and exclusion criteria.

This study was observational and prospective study. Details of these patients were recorded in the proforma.

Inclusion criteria

USG proven cases of oligohydramnios, AFI 5 cm, antenatal patient in third trimester, singleton pregnancy.

Exclusion criteria

AFI >6 cm, multiple gestation, patients having major respiratory, heart disease.

Methodology

Plan of activity and time chart were formulated after taking informed consent from the woman and/or relatives. Other potential explanatory variables were obtained including maternal age, booking status, PIH and other risk factors at the time of admission were recorded. Detailed clinical history including obstetric, menstrual, past and personal history were taken. Thorough general, systemic and obstetric examination was conducted. Woman's hematological profile was done. AFI to be measured using phelan's four quadrant ultrasound technique.[1-3] The uterus is arbitrarily divided into four quadrants by the umbilicus transversely and the linea nigra vertically.

The largest vertical pocket free of fetal parts and umbilical cord loops in each quadrant is measured and sum of these measurements will give AFI in cm. An AFI of 5-24 cm is normal. AFI of <5 cm is considered Oligohydramnios. USG at the time of admission was recorded including fetal biometry, amniotic fluid volume and color doppler. Study of association of various maternal factors like prolong pregnancy, hypertensive disorders of pregnancy, PROM etc. Outcome was noted in the form of mode of delivery, fetal outcome, apgar score, fetal birth weight, maturity, admission to nursery and postnatal complications, if any.

RESULTS

All the information was entered in the proforma and analyzed and observations were made and accordingly discussion. 58% of patients were in 20-25 years age group and 29% in 26 -30 year age group thus maximum patient were in 26 -30 year .Mean meternal age was23.66 (Table 1) .Table 2 shows that primipara patients form a major burden of admissions due to oligohydramnios. This table 3 shows that case of oligohydramnios according to gestational age. It was increase in case of prolonged pregnancy.

Mode of Delivery: 42% cases were delivered by LSCS (Table 6).

Table 1: Distribution of patients according to age.

Age (Years)	Oligohydramnios	
	No.	**%**
18-20	11	07%
20-25	87	58%
26-30	43	29%
> 30	09	06%
Total	150	

Table 2: Distribution of patients according to parity.

Parity	Cases 150	
	No.	**%**
Para 0	44	29
Para 1	85	57
Para 2	15	10
Para 3 and above	06	04

Table 3: According to gestational age.

Gestational age (weeks)	Cases 150	
	No.	**%**
28-32	21	14%
33-34	33	22%
35-37	33	22%
38-40	28	19%
>41	35	23%

AFI wise distribution; in the present study 66% were of moderate AFI and 29% were severe oligohydramnios and 5% anhydramnios (Table 4).

Table 4: Classification of patients according to AFI.

AFI (up to 5 cm)	Cases 150	
	No.	**%**
3.1-5	99	66
1-3	43	29
Anhydramnios	08	05

Table 5: Maternal factors associated with oligohydramnios.

Maternal Factors	Total No.	%
Prolonged pregnancy (>40wks)	35	23
PIH Gestational Hypertension Preeclampsia Eclampsia	40 23 13 04	26
PROM	14	9
Idiopathic	48	32
malpresentation	05	3
Chorioamnionitis	0	0
Chronic renal disease	02	1.4
Chronic abruptio	06	4

Table 6: Distribution of cases according to mode of delivery.

Mode of Delivery	Cases (N=150)	
	No.	%
LSCS	64	42
Vaginal Delivery	86	57

Table 7: Indication for LSCS.

Indication for LSCS	Cases	
	No.	%
Total LSCS	64	42
Fetal distress	09	14
MSL	08	12.5
Anhydramnios	05	7.8
Malpresentation (breech)	07	7.9
Failed induction	07	7.9
Previous section	08	12.5
Oligohydramnios/IUGR with Doppler changes	21	32.8
Chorioamniotis	01	1.5
Cord around Neck	01	1.5
Bad obstetric history	01	1.5

Table 8: Distribution of apgar score at birth at 1 min and 5 min.

Apgar Score	At 1 min	At 5 min
8-10	4	67
5-7	126	66
3-4	14	08
<3	1	0

It was seen that LSCS in the study group was primarily done for oligohydramnios/IUGR, fetal hypoxia or fetal distress/meconium stained liquor (Table 7).

Perinatal outcome

In the present study, the Apgar score was noted 1 and 5 minutes after birth (Table 8).

Table 9: Distribution of cases according to perinatal outcome.

Perinatal Outcome	Cases	
	No.	%
Nursery admission	52	35
Alive and healthy	93	62
Still birth FSB MS	05 04 01	3.33 2.67 0.67

Table 10: Distribution of cases according to perinatal mortality.

Perinatal Mortality	Cases	
	No.	%
Still birth FSB MSB	05 04 01	3.33 2.67 0.67
Early neonatal death	15	10
Total perinatal mortality	20	13.33

DISCUSSION

Perinatal morbidity and mortality are significantly increased when oligohydramnios is present. Accurate antepartum estimation of amniotic fluid volume by clinical means alone is difficult but it is easily diagnosed by current ultrasound methods.[1-3] With the easier availability of ultrasonography nowadays more cases of oligohydramnios are being identified. This helps us to be more cautious and anticipate problems especially during labour. In the present study 58% of patients were in 20-25 years age group and 29% in 26-30 year age. Mean meternal age was 23.66. Similar studies by Chauhan P et al found that the mean maternal age were 23.6±6.5 years. In Donald D et el the incidence of oligohydramnios was 60% in primigravida which is comparable to present study 57% patients were para 1.[5,6] According to gestational age it is increase in >40 weeks pregnancy 23% in the present study. Clement D et al studied six cases of postdatism, in which amniotic fluid volume diminished abruptly over 24 hours.[7] Bowen Chattoor JS et al in their study evaluated the relationship between amniotic fluid index and perinatal outcomes in fifty five postdate pregnancies.[17]

Obstetrical complications frequently associated with oligohydramnios .in present study idiopathic cause 32%, PIH was present in 25% cases. Similar result found in Golan A et al in his study, found maternal hypertension in 22.1% cases.[8] Cesarean section was performed in 32.8% of these cases. Mercer LJ et al found that preeclampsia was present in 24.7% of cases with decreased fluid. Study by Chauhan P et al. reported,

preeclampsia in 12% cases.[5] They concluded that the incidence of oligohydramnios ranges from 10 to 30 % in hypertensive patients requiring hospitalization.

Mode of delivery

The LSCS was done in 42% in present study which is compared with the situations in other studies. Study by Casey B et al found that, there was increased rate of induction of labour (42%) and cesarean section (32%) in oligohydramnios cases.[9] Golan A et al. found that, the cesarean section was performed in 35.2% of pregnancies.[8] These are comparable to my study.

Perinatal outcome

In the present study, the Apgar score was noted at 1 and 5 minutes after birth. 16.3% babies had low Apgar score (less than 7 at 1 and 5 min). Syria R et al in their study have reported 38.8% incidence of Apgar score less than 7 at 1 minute.[10] In a similar study by Casey B et al (6%) babies had Apgar score of less than 3 at 5 minute.[9] Out of these nine babies, seven died during neonatal period. Jun Zhang et al found that an Apgar score of <7 at 1 minute was present in fifteen.[12] Six babies had Apgar score of <7 at 5 minute.

Notably; the incidence of meconium aspiration syndrome in infants with oligohydramnios was significantly higher despite the diminished identification of meconium stained amniotic fluid. Bowen Chattoor JS et al studied perinatal outcome in 55 postdate pregnancies. Oligohydramnios was noted in four patients.[16] All 4 babies were admitted with meconium aspiration. One died due to this complication.

In our study neonates of 35% cases were admitted in nursery. Syria R et al has reported a very high incidence of NICU admission.[10] In their study 88.88% newborns were admitted in NICU in patients having AFI< 5cm Casey BM et al in their study have reported 7% admission to the NICU in patients with AFI <5cm. Zhang J et al in their study have reported 29.4% admission to NICU in patients with AFI <5cm.

In the present study, there were 62% live births and 3% still births. 10% babies died in neonatal period. The perinatal mortality was 13% in present study. Chamberlin PF et al. calculated the perinatal mortality rate in patients with decreased qualitative amniotic fluid volume and found it to be 188/1000. Chhabra S et al reported very high (87.7%) perinatal mortality in their study.[14] Wolff F et al found that the perinatal mortality in their study was 7.2%.[15] Apel SL et al found that the perinatal mortality was 9.9%.[17] The lack of amniotic fluid allows compression of fetal abdomen, which limits the movement of the diaphragm. Overall, the perinatal mortality is markedly increased in patients with oligohydramnios.

CONCLUSION

In presence of oligohydramnios thorough evaluation of the gravida for hypertension, pre-eclampsia, diabetes, chronic abruption, premature rupture of membrane, drug intake etc should be done. An amniotic fluid index of ≤5 cm detected in third trimester was associated with adverse pregnancy out come as well as indicator of poor perinatal outcome.

Now a days oligohydramnios is most common occurrence in pregnant women. Amniotic fluid volume is a predictor of fetal tolerance in labour and its decrease is associated with increased perinatal morbidity and mortality, rates of cesarean section are rising. Take timely intervention can reduce perinatal morbidity and mortality. Regular antenatal and intranatal monitoring should be done to diagnose any fetal compromise at the earliest. Termination of pregnancy according to the balance of risk of intrauterine asphyxia against those of prematurity should be done to obtain the best outcome. Vaginal delivery and caesarean section should be well balanced so that unnecessary maternal morbidities prevented and improve labour outcome.

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