



A STUDY OF MATERNAL AND PERINATAL OUTCOME OF OLIGOHYDRAMNIOS IN TERM PREGNANCY

Obstetrics & Gynaecology

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ABSTRACT

Oligohydramnios is defined as a condition of low volume of amniotic fluid (<200ml at term). Abnormally low amniotic fluid volume has been associated with adverse pregnancy outcomes. This study was done to analyze the maternal and perinatal outcome in patients with oligohydramnios (AFI<5) at term. Eighty pregnant patients with oligohydramnios at term attending the labour room emergency were included in this study and their maternal and perinatal outcome were noted. There was increased number of deliveries by LSCS. Oligohydramnios was seen to be associated with meconium staining of liquor, low birth weight babies, low APGAR score at 1 and 5 minutes and more NICU admissions.

KEYWORDS

oligohydramnios, perinatal outcome.

INTRODUCTION

Amniotic fluid is the fluid present in amniotic cavity surrounding the fetus. It plays a vital role in the development of a healthy fetus. It is also very important for progress of labour. An appropriate volume of amniotic fluid is one of the most important components of a healthy pregnancy, as it acts as a protective cushion for the fetus, prevents compression of the umbilical cord, and promotes fetal lung development (1). Oligohydramnios is defined as a condition of low volume of amniotic fluid (<200ml at term). Abnormally low amniotic fluid volume has been associated with adverse pregnancy outcomes. The volume of amniotic fluid varies according to gestational age. It increases from 20 ml at 10 weeks, 400 ml at 20 weeks, to 750 ml at 28 weeks and peaks to about 800 ml to 1-litre at 36 weeks. After that it reduces to about 700 ml at term. The average amniotic fluid volume in 3rd trimester is 700-800 ml. In post term pregnancy, it gets further reduced being only 200 ml at 43 weeks. Clinical assessment of amniotic fluid volume by bimanual palpation, symphysiofundal height or abdominal girth is unreliable. Ultrasound is used to diagnose oligohydramnios during the late second trimester or the third trimester by calculating amniotic fluid index (AFI). It is calculated by adding the vertical depths of largest pocket of liquor in each of the four equal uterine quadrants. Amniotic Fluid Index (AFI) below 5 cms or below the 5th percentile is called oligohydramnios (2, 3). In settings where ultrasound use is widespread, rates of oligohydramnios have been reported between 0.5 and 8% among pregnant women (4). Oligohydramnios can be caused by maternal conditions such as utero-placental insufficiency, hypertension, preeclampsia, diabetes, chronic hypoxia, rupture of amniotic membranes, dehydration and post-term gestation and anomalies of the fetus. Most oligohydramnios cases, however, are idiopathic (1, 5). Oligohydramnios is associated with variety of ominous pregnancy outcomes, such as fetal distress, meconium staining of liquor, low birth weight, low APGAR score, NICU admissions, perinatal morbidity, perinatal mortality and increased incidence of caesarean section leading to increased maternal morbidity.

The aim of this study is to analyze the maternal and perinatal outcome in patients with oligohydramnios (AFI<5) at term.

MATERIALS AND METHODS

The study was a prospective study conducted in the department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital from December 2018 to November 2019. A total of 80 pregnant patients with oligohydramnios at term attending the labour room emergency were included in this study.

Inclusion Criteria:

women with singleton pregnancy at term (period of gestation 37-40 weeks) with oligohydramnios (AFI <5) with intact membranes on per vaginum examination.

Exclusion Criteria:

1. History of rupture of membranes

2. Twin pregnancy
3. Anomalous baby
4. Pre eclampsia or eclampsia
5. Post term pregnancy
6. History of chronic disease.

After proper written consent, 80 women were enrolled. All recruited subjects underwent a detailed history and examination as per standard pre-structured protocol. Detailed history was taken and patient's age and last menstrual period was noted. The period of gestation was calculated by last menstrual period. The demographic and clinical details were noted. Patient's menstrual history, obstetric history, past medical and surgical history and family history were also elicited in detail. A history was leaking per vaginum in any trimester was taken. A general physical examination was done. BMI was calculated based on the pre-pregnancy weight and height.

Ultrasound was done in all subjects to calculate the AFI (amniotic fluid index). Women with AFI <5 were enrolled in this study. AFI was measured by dividing the uterus into four quadrants and adding the vertical depths of the largest pocket of liquor in each of the four equal uterine quadrants. It is called oligohydramnios when the maximum vertical pocket of liquor is less than 2 cm or when AFI is less than 5 cm. AFI 5-8 cm is borderline oligohydramnios and AFI 8-18 cm as normal amniotic fluid.(5)

The outcome parameters in this study are maternal and fetal outcome. The maternal outcome was noted by the mode of delivery. The fetal outcome was noted by the weight of baby at birth, colour of amniotic fluid whether meconium stained or not, and the apgar score at 1 and 5 minutes.

RESULTS

A total of 80 patients admitted in emergency department of obstetrics and gynaecology with oligohydramnios were recruited in this study. The mean age was 27±2.2 years. Maximum women were in the age group of 25-30 years (60%).

Table 1 : Distribution Of Women According To Age.

Age(years)	Number	Percentage (%)
20-25	16	20
25-30	48	60
35-40	12	15
>40	4	5

Forty nine women were primigravida accounting to 61.25 %. Thirty one women were multigravida (38.75%).

Labour outcome was determined according to mode of delivery. Vaginal delivery took place in 52 (65%) women and 28 women underwent caesarean section accounting to 35% of total deliveries.

The colour of liquor was observed for meconium. Fifty six women (70%) had normal or clear liquor whereas 24(30%) had meconium stained liquor.

A birth weight less than 2.5 kg was observed in 54 babies which was 67.5% and 26 babies(32.5%) had birth weight more than 2.5 kg. APGAR score at 1 minute was less than 7 in 36 babies (45%) and at 5 min it was less than 7 in 10 babies (12.5%). One baby had stillbirth.

Table 2: Perinatal Outcome

Parameters	Number		Percentage (%)
Vaginal delivery	52		65
Caesarean delivery	28		35
Colour of liquor	Clear	56	70
	Meconium Stained	24	30
Birth weight <2.5 kg	54		67.5
Birth weight >2.5 kg	26		32.5
APGAR at 1 min >7	44		55
APGAR at 1 min <7	36		45
APGAR at 5 min >7	70		87.5
APGAR at 5 min <7	10		12.5

DISCUSSION

Oligohydramnios is associated with adverse maternal and perinatal outcome. Amniotic fluid volume is an important predictor of fetal level of tolerance during labour and a decrease in its level is associated with increased risk of fetal distress and meconium staining of liquor leading to increase in number of caesarean deliveries.

In this study the rate of LSCS was 35%. In a study done by Rajavelu S et al on 200 oligohydramnios cases, the rate of LCSC was 64% and that of vaginal delivery was 36% (6). The LSCS for fetal distress was done in 44% in a similar study conducted by Kumar A et al on 50 cases of oligohydramnios at term (7). This also shows that oligohydramnios leads to increased intervention and caesarean rates.

The incidence of meconium stained liquor is high in women with oligohydramnios (AFI<5). The thick meconium stained liquor was noted in 48% cases in a study done by Kumar A et al (7). In our study this was observed as 30% of total. The difference in percentage can be due to exclusion of post term pregnancies in our study. A prospective study done on 200 cases showed high incidence of meconium stained liquor (58.5%) in oligohydramnios patient with AFI <5(6). In a study by Jandial I et al, the incidence of meconium stained liquor was 48% in women with oligohydramnios.

In the present study the birth weight of 67.5% babies was less than 2.5 kgs. The mean birth weight was less in oligohydramnios group in a study conducted by Kumar A et al. The occurrence of low birth weight was 64% which is comparable with our study (7). In similar studies conducted by Chandra P et al and Sriya R et al, the incidence of low birth babies was 61.53% and 58.38% respectively (9,10). The high incidence of low birth weight may be because of chronic placental insufficiency causing fetal growth restriction. . Bhagat M et al in their study found that 56% neonate in low AFI group had birth weight less than 2.5 kg as compared to 21.7% in normal AFI group (11).

In a study conducted by Verma M et al the APGAR at 1 min <7 was seen in 26% of cases in oligohydramnios group and 10 % cases in babies born to mothers with normal AFI. Six (12%) neonates had APGAR score <7 at 5 minutes (12). Similarly Bhagat M et al found significant difference in APGAR score at 1 minute (36% versus 10.9%) in oligohydramnios and normal AFI group (11). They found no difference in the low APGAR score at 5 minutes in the two groups. The APGAR score in our study was less than 7 at 1 min and 5 min in 45% and 12.5 % cases respectively which was similar to the above mentioned studies.

CONCLUSION

In the present study we concluded that oligohydramnios was associated with increased rate of meconium stained liquor and caesarean deliveries. It is also associated with adverse perinatal outcome. There is a significant correlation between oligohydramnios and low birth weight babies. Women with oligohydramnios at term need strict monitoring during labour and early intervention should be done when required.

Abbreviations:

1. AFI- amniotic fluid index
2. LSCS- lower segment caesarean section
3. MSL- meconium stained liquor
4. BMI- body mass index

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