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INCIDENCE OF OLIGOHYDRAMNIOS IN THE THIRD TRIMESTER OF PREGNANCY AND ITS EFFECTS ON THE FOETUS

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ABSTRACT

Background and objective: To define oligohydramnios with respect to age, parity, gestational age distribution, maternal morbidity, and perinatal morbidity.

Method: The Department of OG, government Mohan Kumaramangalam medical college hospital, Salem, Tamil nadu, India conducted a prospective study. For 12,000 third-trimester prenatal moms participating in the trial, a history, clinical examination, and ultrasound were performed to determine the amniotic fluid index. Analyses of the results were conducted on 200 patients who had oligoamnios and were monitored.

Result: It was 36.7+/- 4.1 weeks on average for gestation. It was 3 +/- 1.04cm on average for the amniotic fluid index. 24 percent of cases had gestational hypertension. 18.8% of pregnancies were postdated. Intrauterine growth limitation occurred 15.3% of the time. Vaginal births were just 37.6 % of births, whereas caesarean sections were performed 59.4% of the time. In 16.47% and 17.05% of babies, respectively, an Apgar score of less than 7 was recorded at 1 minute. 3.7 % of infants died in the first year.

Conclusion: All oligohydramnios instances necessitate thorough prenatal testing, parental counselling, and individualised decisions on birth time and method. A better perinatal outcome requires ongoing intrapartum foetal monitoring and excellent newborn care.

Keywords: Oligohydramnios, perinatal outcome, maternal outcome

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INTRODUCTION

Oligohydramnios is medically referred to as decreased liquor, and it is described as having an Amniotic Fluid Index (AFI) of less than 5 cm. Oligohydramnios is a potentially dangerous condition for the developing foetus since it has been linked to an increased risk of intrauterine growth restriction, meconium aspiration syndrome, severe birth asphyxia, low Apgar scores, and congenital defects [1,2,3]. The complications that can arise as a result of prolonged oligohydramnios include foetal compression syndrome and pulmonary hypoplasia. Both of these conditions are extremely serious. It has been linked to an elevated risk of maternal and foetal morbidity and mortality. Because of this, the early detection of oligohydramnios and management of the condition are both very crucial [4,5,6]. Oligohydramnios is a pregnancy issue that occurs more frequently than you might think. Oligohydramnios is a condition that affects roughly 2.3% of all pregnancies and can be considered a complication. Oligohydramnios is more likely after 40 weeks of pregnancy since the volume of amniotic fluid generally starts decreasing at term, which is when term pregnancies begin. Oligohydramnios can be caused by a variety of factors, including congenital defects, intrauterine growth restriction, premature rupture of the membranes, medications, and pregnancy that has progressed past the term [7,8].

Oligohydramnios is associated with dramatically elevated rates of perinatal morbidity and mortality in pregnancies that are already complex. In order to successfully manage the condition, a comprehensive search must be conducted to determine the source of the decreased amniotic fluid content, and close prenatal monitoring is required [9,10].

MATERIAL AND METHOD

At the Department of OG, government Mohan Kumaramangalam medical college hospital, Salem, Tamil nadu, India, where 170 patients attending the outpatient clinics, antenatal ward, and labour ward from May 2022 to April 2023 underwent a descriptive study.

Inclusion criteria:

1. USG confirmed cases of oligohydramnios with an AFI of less than 5 cm

2. Having a pregnancy that is more than 28 weeks old

3. Pregnancy of Singleton

Exclusion criteria:

1. AFI > 6cm

2. Membrane rupturing spontaneously

3. Several gestations

RESULT

Amniotic fluid index

While assessing Amniotic fluid index, the study population had AFI of 4cm and 21.2% of

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cases had AFI of 2 cm and 18.3% cases had AFI of 5cm.

Table 1: Amniotic Fluid index

Amniotic fluid index	Number	Percentage
0	22	13
1	16	9.4
2	36	21.2
3	18	10.5
4	44	25.8
5	31	18.3
Total	170	100

Obstetric complications

Gestational hypertension (22.3%), postdated pregnancy (18.8%) and intra uterine growth restriction (15.3%) were the complications observed in mothers with oligohydramnios.

Table 2: Obstetric complications

Complications	Number of cases	Percentage
Gestational hypertension	38	22.3
Postdated	32	18.8
Intrauterine growth restriction	26	15.3
GDM	7	4.1
Nil complications	67	39.4
total	170	100

Mode of delivery

37.64 % of oligohydramnios mothers had normal vaginal delivery and 59.4% had operative (caesarean) deliveries.

Table 4: Mode of Delivery

Mode of delivery	Number	Percentage
Vaginal delivery	64	37.64
Operative delivery	101	59.4
Instrumental deliveries	5	2.9
Total	170	100
Chi Square Value	9.785	P value 0.009

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Birth weight of newborn babies

About 50.5% of babies had birth weight of 2 to 2.5 kg, 24.7% of babies had birth weight of 2.6 to 3 kg and 17.6 % of babies had birth weight of more than 3 kg.

Table 5: Birth weight

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Birth weight	Number	Percentage
1 -2kg	12	7.1
2 -2.5kg	86	50.5
2.6 -3kg	42	24.7
>3kg	30	17.6
Total	170	100
Chi Square Value	41.764	P value 0.000

Apgar score

Apgar score <7 at 1 min is observed in 16.47% and score <7 at 5 min is observed in 17.05% of the babies delivered.

Table 6: Apgar score

Apgar score<7	Number	Percentage
at 1 minute	28	16.47
at 5 minute	29	17.05
Chi Square Value	7.854	P value 0.008

Neonatal morbidity

About 59 babies got admitted in NICU. Of these about 35 babies needed admission for meconium aspiration and 9 babies each got admitted for LBW and RDS.

Perinatal mortality

In our study we have not observed any still birth among oligohydramnios patients; this is because of the close antepartum and intrapartum surveillance. But had 3.5% of neonatal death due to meconium aspiration syndrome resultingin primary pulmonary hypertension.

Table 8: Perinatal Mortality

Perinatal mortality	Number	Percentage
Still birth	0	0
Early neonatal death	6	3.5
Chi Square Value	0.340	P value 0.560

DISCUSSION

With a mean mother age of 22.8+/- 4.2 years in the current study, 64% of cases were in the 20 to 29 year age range, as opposed to other age groups. The mean maternal age was found to be 23.6 +/- 6.5 years, 28.4 +/- 3.4 years, and 23.8 +/- 5.7 years, respectively, in studies by

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Chauhan et al., Jun Zhang et al., and Everett et al. The current study's average gestational age was 36.7 weeks, plus or minus 4.1. The results of studies by Sandhyasri Panda et al., Everett et al., Casey B et al., and Jun Zhang et al [11,12]. revealed that the mean gestational ages were, respectively, 38.1 +/- 3.3 weeks, 37.5 +/- 2 weeks, 34.3 +/- 2.1 weeks, and 36.3 +/- 2 weeks. These results suggest that the oligohydramnios issue was more prevalent in the latter stages of pregnancy. Reduced placental perfusion in the short term is mostly caused by physiological or pathological factors. According to research by Jun Zhang et al., Divon M et al., Elliot H et al., Varma T R et al., and others, the incidence of oligohydramnios was 1.5%, 1.2%, 3.9%, and 3.1%, respectively. 170 pregnancies were reported to have AFI in the current study of pregnant mothers [12,13].

Obstetrical issues such gestational hypertension, post-datism, and intrauterine growth limitation were linked to oligohydramnios. 22.3% of cases in the current research have gestational hypertension. Golan A. et al., Mercer L. J. et al., Chauhan P. et al. discovered maternal hypertension in 22,1%, 24.7%, and 12% of cases, respectively, in their study. In the current study, 20% of patients with oligoamnios had postdated pregnancies. In six postdatism cases where amniotic fluid content abruptly decreased over the course of 24 hours, Clement D et al. evaluated the situation. Four (7.2%) of the 55 postdated pregnancies in a study by Browen Chattoor JS et al. had oligohydramnios. 14% of oligoamnios patients in the current study had intra uterine growth limitation. 20% of the cases in the Bangal VB et al. research developed IUGR [13,14].

Patients with oligoamnios had a 63% caesarean section rate and a 35% vaginal delivery rate in the current study. Induction of labour (42%) and caesarean sections (32%) were more common in oligohydramnios cases, according to a study by Casey B et al. According to Golan A et al., 35.2% of pregnancies in general required a caesarean procedure. In the current study, newborns of oligoamniotic women had an Apgar score at birth less than 7 in 16.66% and 17.33% at 1 and 5 minutes, respectively. 35 infants (23%) who were among the 59 infants who were admitted to the NICU had meconium aspiration. During the neonatal stage, four infants perished. Casey B. et al. found that 6% (n=9) of infants had an Apgar score of less than 3 at 5 minutes. Of these 9, 7 infants perished during the newborn period. Jun Zhang et al. discovered that fifteen babies had an Apgar score of 7 or below at 1 minute, and six babies had the same score at 5 minutes. 16 newborns (16%) in the Bangal VB et al. trial had poor Apgar scores (less than 7 at 5 minutes). Eight newborn deaths occurred out of 16 infants with low Apgar scores [14,15].

Gross perinatal mortality was 2.6% in the current study. Three of the four prenatal deaths were observed in cases that were not reported. In their study, Chhabra S et al. reported relatively high (87.7%) perinatal mortality [16,17]. Perinatal mortality in this study was 7.2%, according to Wolff F et al. Perinatal mortality was 9.9%, according to Apel-Sarid et al. In individuals with decreased qualitative amniotic fluid volume, Chamberlin PF et al. assessed the gross and adjusted perinatal mortality rates and found that they were 188/1000 and 109/1000, respectively. Patients with oligohydramnios have a much higher overall rate of

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perinatal mortality. The foetal abdomen can be compressed due to the absence of amniotic fluid, which restricts the diaphragm's range of motion [17,18].

CONCLUSION

Nowadays, more oligohydramnios cases are found because to standard obstetric ultrasonography. In our investigation, we found that primigravida are the ones who have oligohydramnios the most frequently. The severity of the oligohydramnios and the foetal health condition determine the timing and method of delivery in these circumstances. In our study, individuals who underwent Caesarean sections did so mostly for foetal reasons, such as abnormal foetal heart rates that occurred during labour and were unrelated to any maternal factors. Low birth weight neonates are more likely to have respiratory distress as a result of early pregnancy termination due to severe oligohydramnios. In the current study, the gross perinatal death rate was 2.6%. However, compared to past research, the percentage of newborn deaths has significantly decreased because to better neonatal setup and intensive intrapartum foetal surveillance. For a better perinatal result, we state at the end of our study that every case of oligohydramnios requires comprehensive antenatal evaluation, parental counselling, individual decisions on the date and style of delivery, close intrapartum foetal surveillance, and effective newborn care.

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Conflict of interest:

Nil

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