

Maternal and Neonatal Outcome in Patients with Oligohydramnios

Rani Vijay Daruwale

DNB (Obstetrics and Gynaecology), Department of Obstetrics and Gynaecology,
K. J. Somaiya Medical College and Research Centre, Mumbai, Maharashtra, India.

ABSTRACT

Background: Quantitative estimate of amniotic fluid capacity is a section of daily obstetric scan. Semi quantitative determination of the quantity of amniotic fluid is done using amniotic fluid index, that is calculated by addition of the depth in centimeters of largest vertical pocket in four quadrants each. Oligohydramnios with disapproving maternal and fetal circumstances lead to a worst perinatal result than normal amniotic fluid volume under the same conditions. In these situations oligohydramnios may indicate a more severe impaired function of placenta and fetal compromise. The present study was conducted to evaluate the maternal and neonatal outcome in pregnant females with Oligohydramnios.

Materials and Methods: The present prospective study was conducted in the Department of Obstetrics and Gynecology for a period of 1 year. Estimates of amount of amniotic fluid volume was estimated using AFI. Color Doppler tests were performed amongst women with isolated oligohydramnios. All the information from the females was taken on a patient information sheet. Details of infant at birth were recorded. All the data this obtained was arranged in a tabulated form and analyzed using SPSS software. Probability value of less than 0.05 was considered as significant.

Results: A total of 130 subjects were enrolled in the study. The incidence of oligohydramnios was 2.8%. 37.69% patients had severe oligohydramnios, 43.84% patients had moderate oligohydramnios and 18.46% patients had mild oligohydramnios. 55% patients were primigravidas. 42.3% patients were preterm, 48.5% patients were term and 9.2% patients were post dated. 26.9% patients with oligohydramnios showed intrauterine growth restriction. 15.3% patients had pregnancy induced hypertension and 6.9% patients had both PIH and IUGR. IUGR was maximally seen in the group of severe oligohydramnios and foetal distress was also observed more in this group. 33.8% patients were delivered vaginally without any instrumentation, 2.3% patients were delivered with help of vaccum, 63.9% underwent LSCS. There were 10% subjects less than 20 years, 51% were between

21-25 years, 25% were between 26-30 years, 9% were between 31-35 years. There were 85% (majority) with cephalic presentation. 13% (n=17) had breech and 2% had transverse presentation. 73.27% of babies were low birth weight. 6% babies had congenital anomalies. 11% babies accounted for perinatal mortality with extreme prematurity as the cause of death in majority.

Conclusion: In our study the most common age group afflicted was 21-25 years as the incidence of pregnancy is also maximum in this age group. Perinatal morbidity and mortality was maximally seen in patients with severe oligohydramnios. Isolated oligohydramnios at more than 36 weeks of gestation does not affect perinatal outcome. The presence of moderate to severe oligohydramnios should alert the Obstetrician to a high risk fetal condition and should prompt the obstetrician to initiate an active intervention in collaboration with the neonatologist. Finally, regular ANC checkup, fetal surveillance, treatment of associated maternal medical conditions help to achieve better perinatal outcome.

Keywords: cephalic, Doppler, Oligohydramnios, outcome

***Correspondence to:**

Dr. Rani Vijay Daruwale,
DNB (Obstetrics and Gynaecology),
Department of Obstetrics and Gynaecology,
K. J. Somaiya Medical College and Research Centre,
Mumbai, Maharashtra, India.

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INTRODUCTION

Quantitative estimate of amniotic fluid capacity is a section of daily obstetric scan. Semi quantitative determination of the quantity of amniotic fluid is done using amniotic fluid index, that is calculated by addition of the depth in centimeters of largest vertical pocket in four quadrants each.¹ Oligohydramnios is seen in amongst 1% to 5% of pregnancies at full term.^{2,3}

The usage of amniotic fluid index lesser than or equivalent to 5 cm for defining oligohydramnios was given initially by Phelan et al in the year 1987 as a random cutoff point.³ It is well considered that oligohydramnios is associated with an elevated risk of adverse perinatal outcome.^{4,5} On the other side oligohydramnios is a meager for predicting any adverse outcomes.^{6,7}

Oligohydramnios with disapproving maternal and fetal circumstances lead to a worst perinatal result than normal amniotic fluid volume under the same conditions. In these situations oligohydramnios may indicate a more severe impaired function of placenta and fetal compromise. The present study was conducted to evaluate the maternal and neonatal outcome in pregnant females with Oligohydramnios.

MATERIALS AND METHODS

The present prospective study was conducted in the Department of Obstetrics and Gynecology for a period of 1 year. Ethical committee clearance was obtained from the institutional ethical board and all the subjects were informed about the study and a written consent was obtained from them in their vernacular language. The study included 130 patients. Cases with singleton pregnancy and intact membranes were included in the study. Patients with premature membrane rupture; growth restriction during intra-uterine life; or intrauterine death of the fetus were not included in the study. Ultrasonic examination was done to confirm the diagnosis of oligohydramnios. Estimates of amount of amniotic fluid volume were estimated using AFI. Color Doppler tests were performed amongst women with isolated oligohydramnios. All the information from the females was taken on a patient information sheet. The age of patients, gravidae status and the presentation of fetus along with mode of delivery was noted in all patients. Details of infant at birth was recorded. All the data this obtained was arranged in a tabulated form and analyzed using SPSS software. Probability value of less than 0.05 was considered as significant.

Table 1: Association between oligohydramnios and age and gravidae

Age	Frequency	Percentage
<20	13	10
21-25	68	51
26-30	32	25
31-35	11	9
>35	6	5
Total	130	100
Gravidae		
Primigravidae	72	55
Gravida 2	35	27
Gravida 3 or above	23	18
Total	130	100

Table 2: Association between oligohydramnios and presentation of fetus and mode of delivery

Presentation	Frequency	Percentage
Cephalic	111	85
Breech	17	13
Transverse	3	2
Total	130	100
Delivery mode		
Vaginal	44	33.8
Forceps	0	0
Vacuum	3	2.3
LSCS	83	63.9
Total	130	100

RESULTS

A total of 130 subjects were enrolled in the study. The incidence of oligohydramnios was 2.8%. 37.69% patients had severe oligohydramnios, 43.84% patients had moderate oligohydramnios and 18.46% patients had mild oligohydramnios. There were 10% subjects less than 20 years, 51% were between 21-25 years, 25% were between 26-30 years, 9% were between 31-35 years and there were only 5% subjects more than 35 years. Majority of subjects (55%) were primigravidae. There were 27% with gravida 2 and only 18% with gravida 3 or more. (Table 1)

Table 2 shows association between oligohydramnios and presentation of fetus and mode of delivery. There were 85% (majority) with cephalic presentation. 13% (n=17) had breech and 2% had transverse presentation. Vaginal delivery was seen in 33.8% patients. There was no subject with forceps delivery. Vacuum delivery was observed in 2.3% cases. Approximately 63.9% showed LSCS delivery.

42.3% patients were preterm, 48.5% patients were term and 9.2% patients were postdated. 26.9% patients with oligohydramnios showed intrauterine growth restriction. 15.3% patients had pregnancy induced hypertension and 6.9% patients had both PIH and IUGR. IUGR was maximally seen in the group of severe oligohydramnios and foetal distress was also observed more in this group. 73.27% of babies were low birth weight. 6% babies had congenital anomalies. 11% babies accounted for perinatal mortality with extreme prematurity as the cause of death in majority.

DISCUSSION

Oligohydramnios is a gravesnag of pregnancy that is related with poor perinatal results. Abnormality in volume of amniotic fluid can be the only or initial sonographic signal of any obstetric issue. The frequency of oligohydramnios is found to be around 1 to 5 % of the combine pregnancies.⁸ Phelan gave that amniotic fluid level as a more clear and reproducible technique as it evaluates the amniotic fluid in all the four quadrants, and defined oligohydramnios if AFI was lesser than 5 cm, with the normal level being 12.9 ±4.6 cm.^{3,9} Ship and his colleagues found a bimodal distribution while evaluating the diagnosis of severe oligohydramnios with increased number of cases between 13-21 weeks and 34-42 weeks. Oligohydramnios carries a great challenge in Obstetric treatment especially when it is diagnosed before the complete term. In the present study, A total of 130 subjects were enrolled in the study. There were 10% subjects less than 20 years, 51% were between 21-25 years, 25% were between 26-30 years, 9% were between 31-35 years and there were only 5% subjects more than 35 years. Majority of subjects (55%) were primigravidae. There were 27% with gravida 2 and only 18% with gravida 3 or more, which was similar to study by Krishna Jagatia.¹⁰ There were 85% (majority) with cephalic presentation. 13% (n=17) had breach and 2% had transverse presentation. Vaginal delivery was seen in 33.8% patients. There was no subject with forceps delivery. Vaccum delivery was observed in 2.3% cases. Approximately 63.9% showed LSCS delivery. It was most commonly seen observed between 21-25 years (52%), just like a study by Madhavi et al.¹¹ Even though the incidence of oligohydramnios in teenage and the elderly pregnancies was high, the studies showed. Majority frequency of scenarios between the ages of 20-30 years, as it was the most frequent age at which females of Indian community

marry and become pregnant. The frequency distribution of patients in primigravida and multigravida in present study is 55% and 45% respectively, was similar to study by Petrozella¹² (60% and 40%) and study by Hindumathi M et al. The incidence of Hypertensive conditions of pregnancy in a study by Krishna Jagatia et al was 25%¹⁰ and By Golan A et al¹³ Was 22.1%, incidence of past dates and Anemia were 17% and 55% in a study by Bansal et al. Even though there is no sufficient proof that Anemia could be a cause of Oligohydramnios, its increased prevalence in oligohydramnios patients may indicate an indirect correlation or could be due to anemia endemic area. As per a study by Golan A et al¹³, he found maternal hypertension in 22.1% cases. As per Mercer L J et. Al, preeclampsia was seen in 24.7% cases with reduced fluid. They came to conclusion that the frequency of oligohydramnios varies between 10 to 30 % in hypertensive subjects that need hospitalization.

CONCLUSION

Amniotic fluid provides protection, support development of respiratory system, gastrointestinal tract and musculoskeletal system. Oligohydramnios is observed more commonly in primigravida due to association with PIH which is more common in primigravidas. Perinatal outcomes depends on gestational age at which oligohydramnios occurs and its severity. Oligohydramnios occurring in second trimester has survival rate of 10.2% only while third trimester oligohydramnios has survival rate of 85%. Congenital anomalies especially renal anomalies are more prevalent in second trimester oligohydramnios. Isolated oligohydramnios occurring after 36 weeks of gestation does not affect perinatal outcome. Patients with oligohydramnios has tendency to deliver preterm so preterm care is essential. Ultrasonography is the only confirmatory investigation for oligohydramnios. Role of hydration therapy has been suggested, causes transient rise in amniotic fluid for about 24 hours. Route of delivery does not affect baby outcome unless AFI is less than 3cm.

Patients with oligohydramnios should undergo regular antenatal checkup, ultrasonography, fetal surveillance, management of medical conditions like anemia, hypertension and hemorrhage to achieve better perinatal outcome.

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