

Perinatal Outcome in Cases of Isolated Oligohydroamnios at Term at Tertiary Care Center of Wah Cantt & HIT Taxilla

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ABSTRACT

Background: Measurement or quantitative estimation of liquor/ amniotic fluid is an integral part of routine obstetrical scan. Amniotic fluid index (AFI) is calculated as the sum of deepest pocket of fluid in the four quadrants of the gravid uterus. Amniotic fluid is essential for fetal growth and development. It provides a protective cushion against any external force/trauma and allows the movement of fetus and its growth. It is an essential part of BPP (Biophysical profile) and its values correlate well with adequacy of renal perfusion. Abnormalities of AFI can interfere with the fetal development and may serve as an indicator for underlying fetal or maternal disease.

Objective: To determine the frequency of perinatal outcomes in cases of isolated oligohydroamnios those were induced at term.

Study Design: Cross sectional study

Place and Duration of Study: Department of Obstetrics & Gynaecology, Pakistan Ordinance Factories Hospital, Wah Cantt, Aero Hospital, AWC, Wah Cantt and HITEC-IMS, HIT Hospital, Taxilla Cantt from 1st January 2017 to 31st December 2018.

Methodology: Eighty two patients presenting with oligohydroamnios, age of female 22-38 years, AFI 5cm or less, single alive intrauterine fetus with cephalic presentation having 37 completed weeks of gestation and intact membrane were included.

Results: The mean age was 28±3.07 years of females. The mean birth weight of infants was 3.2±0.6 Kg, mean gestational age of newborn was 36±1.2 weeks. 41(50%) were delivered through spontaneous vaginal delivery and other 41 (50%) were delivered through caesarean delivery. Mean APGAR score at 1 min was 6.48 and at 5 min mean APGAR Score was 8.3 and 31 (38%) were admitted in NICU.

Conclusion: Pregnant women with oligohydroamnios can be identified by a good clinical examination and further can easily be confirmed by a non-invasive ultrasonography by measuring AFI.

Keywords: Amniotic fluid, Oligohydroamnios, Perinatal outcome

INTRODUCTION

Oligohydroamnios occurs in about 1-5 % of pregnancies at term.¹ Quantitative estimation of amniotic fluid is an integral part of routine obstetrical scan. Amniotic fluid index (AFI) is calculated as the sum of deepest pocket of fluid in the four quadrants of the gravid uterus.² Amniotic fluid is essential for fetal growth and development providing protective cushion against any external force/trauma and allows the movement of fetus and its growth. Abnormalities of AFI can interfere with the fetal development and may serve as an indicator for underlying fetal or maternal disease.³

Normal range for AFI is between 8-25cm. 5-8cm low normal, <5cm considered as oligohydroamnios.⁴ Oligohydroamnios can either be isolated or associated with maternal and fetal pathology e.g. pre-labor rupture of membranes, fetal growth restriction, hypertension or congenital abnormalities.⁵ Incidence of oligohydroamnios varies widely from approx. 0.5/1%-5% at term.^{2,5} Oligohydroamnios has been associated with a number of adverse perinatal outcomes, e.g. fetal distress (non reassuring fetal heart rate), perinatal morbidity and mortality, low birth weight and increased incidence of cesarean section.^{1,3}

Considering perinatal outcome e.g NICU admissions some studies did not show any significant differences between oligohydroamnios induced at term.⁶ Recent study has shown that oligohydroamnios is associated with 3-fold or 2-fold increased risk of abdominal delivery for fetal distress.^{1,5} This study aims to determine perinatal outcomes in isolated oligohydroamnios induced at term which will help to set a protocol for managing of pregnancy with isolated oligohydroamnios.

MATERIALS AND METHODS

This cross sectional study was done in Obstetrics and Gynaecology Department, Pakistan Ordinance Factories Hospital, Wah Cantt, Aero Hospital, AWC Wah Cantt and HITEC-IMS, HIT Hospital, Taxilla Cantt from 1st January 2017 to 31st December 2018. Eighty two patients with age of female 22-38 years, AFI 5cm or less, single alive intrauterine fetus with cephalic presentation having 37 completed weeks of gestation and intact membrane were included. Pre- and post-term patients, associated fetal

malformations, PPROM or PROM, malpresentation and multiple gestation, intrauterine growth retardation or intrauterine death, high risk pregnancy i.e. placental insufficiency (HTN, pre-eclampsia, type 2 diabetes mellitus, chronic renal disease, connective tissue disorders) were excluded.

After taking permission from ethical committee of hospital, patients fulfilling inclusion criteria were admitted through OPD after complete evaluation with history, physical and pelvic examination, investigations (Blood CP and group, Rh typing, urine analysis, BSR, RFTS, LFTS, HBsAg and Anti-HCV serology, obstetrical USG) and informed consent for inclusion in the study was taken. Pregnant patients with AFI 5cm or less calculated by obstetrical ultrasound in ward and no other risk factors or co-morbidities were included. Clinical evidence for oligohydroamnios was looked for. Previous records and USG reports were reviewed. AFI was calculated by 4 quadrant amniotic fluid volume measurement technique. Gestational age was calculated from the date of last menstrual period and confirmed by 1st trimester scan.

Once diagnosis of oligohydroamnios was confirmed & term gestation verified, hospitalization was planned for induction of labor. Labor was induced within 24-48hrs in accordance with the established clinical protocol at our center. Patients were followed till their delivery time and then their outcome were recorded. Monitoring through CTG was done hourly. Abnormalities in CTG showing fetal distress were indication for proceeding with cesarean section. APGAR score was noted at 1 min and 5 min interval. Data regarding babies requiring admission in NICU admissions was recorded. All data was entered and analyzed using SPSS version 20.

RESULTS

The mean gestational age of newborn was 36±1.2 weeks. Forty nine (60%) infants were 37 weeks, 29 infants (35%) were 38 weeks and 4 infants (5%) were >38-week gestation. Mean birth weight of infants was 3.2±0.6 kg. The birth weight of 18 (22%) neonates was <2.5 kg, the birth weight of 56 (63%) neonates was between 2.5-4.0 Kg and the birth weight of 8 (10%) neonates was >4.0 kg. Forty one (50%) were delivered through spontaneous

vaginal delivery and other 41 (50%) were delivered through caesarean delivery. Mean APGAR score at 1 min was 6.48 and at 5 min mean APGAR score was 7.3. Thirty one (38%) children were admitted in NICU (Table 1).

In NICU admission, 17 infants were admitted upto 37 weeks, 13 were admitted upto 38 weeks and 1 was admitted >38 weeks [P=0.588] (Table 2). Infants of 5 mothers who got pregnant for 1st time 3 was admitted in NICU, Infants of 43 mothers which got pregnant for 2nd time 14 were admitted in NICU. Infants of 28 mothers which got pregnant for 3rd time; 11 were admitted in NICU and Infants of 06 mothers which got pregnant for 4th time; 3 were admitted in NICU and P=0.973 (Table 3).

Infants of 3 mothers which got delivered for 1st time 1 were admitted in NICU, Infants of 33 mothers which got delivered for 2nd time; 13 were admitted in NICU, Infants of 34 mothers who got delivered for 3rd time; 12 were admitted in NICU and Infants of 12 mothers which got delivered for 4th time; 05 were admitted in NICU and P=0.581 (Table 4)

Table 1: Descriptive statistics of the patients (n=82)

Variable	No.	%
Age (weeks)		
37	49	
38	29	
>38	4	
Weight (kg)		
< 2.5	18	
2.5 - 4.0	56	
> 4.0	8	
Mode of delivery		
Spontaneous vaginal delivery	41	50.0
Caesarean delivery	41	50.0
Admission in NICU		
Yes	31	38.0
No	51	62.0

Table 2: Stratification of admission in NICU according to age (n=82)

Age (weeks)	Admission in NICU		P value
	Yes	No	
37	17	32	0.580
38	13	16	
> 38	1	3	

Table 3: Stratification of admission in NICU according to parity (n=82)

Parity	Admission in NICU		P value
	Yes	No	
1	1	2	0.973
2	13	20	
3	12	22	
4	5	7	

Table 4: Stratification of admission in NICU according to Gravidity N=82)

Gravidity	Admission in NICU		P value
	Yes	No	
1	3	2	0.973
2	14	29	
3	11	17	
4	3	3	

DISCUSSION

Fetal well being can be accessed through sonographic amniotic fluid volume measurement. Decrease in amniotic fluid volume i.e. oligohydroamnios can be common finding in late pregnancy and demands intensive fetal surveillance and proper antepartum and intrapartum care. Oligohydroamnios is a frequent finding in pregnancy involving IUGR, PIH, and pregnancy beyond 40 weeks of gestation.

In our study mean age of patients was 28.02±3.07 years. Mean gestational age was 36±1.2 weeks. In 2019, Jodhpur a study showed that 83% of those patients had 36-40 weeks gestational age. Mean gestational age is 36.3±2.43 weeks.⁷ Thobbi et al⁸ showed that most patients belonged to age group 21-25 years. 48% patients (96) were primigravida and 52% patients were multigravida. In this study 5 out of 82 patients were primigravida.

In our study mean birth weight of infants was 3.2±0.6 kg. Birth weight of 56 (63%) neonates was between 2.5-4.0 kg. In study by Thobbi et al⁸ 58% (116) of neonates out of 200 patients

had birth weight >2.5 kg. In our study 50% patients had vaginal delivery and 50% underwent caesarean section. In our study 31 neonates were admitted in NICU. Study conducted by Sharma et al⁷ showed that patients with isolated oligohydroamnios 60% patients were delivered per vaginally and 40% patients underwent caesarean section. 97% of the infants born were healthy and sent home after few hours of observation and only 3% required NICU admission. Thobbi et al⁸ showed higher rates of caesarean section among oligohydroamnios patients. 25% patients had vaginal delivery and 75% underwent caesarean section. 38% neonates had NICU admission and perinatal mortality occurred in 12% neonates. Zhang et al⁹ and Patel et al¹⁰ in their studies showed that isolated oligohydroamnios was not associated with an increased perinatal morbidity and mortality.

In 2016 study was conducted in India; results showed that mean maternal age was 23.58±3.43 years and commonly patients were primigravida. Caesarean section was performed in 44% of cases. Mostly babies had birth weight < 2.5 kg i.e. 76% and 44% babies had NICU admission.¹¹ A study conducted in India in 2016 included 50 patients with isolated oligohydroamnios. Results showed that 32% (16 out of 50) had normal vaginal delivery, 18% (9 out of 50) had instrumental delivery and 50% (25 out of 50) underwent caesarean section. 22 babies (44%) had birth weight <2.5 kg. Six babies (12%) were admitted to the neonatal intensive care unit (NICU).¹²

Chidanandaiah et al¹³ found 42% NICU admissions among cases of oligohydroamnios while Kavitha et al¹⁴ found 7% NICU admission in case of oligohydroamnios. Newborns were admitted in NICU for various morbidities like jaundice, septicaemia, IUGR and birth asphyxia.

CONCLUSION

Oligohydroamnios can be diagnosed through thorough clinical examination and confirmed by ultrasonography by measuring AFI. Complication like IUD, fetal distress, NICU admission and neonatal death have been associated with presence of oligohydroamnios. AFI is main component of biophysical profile scoring helping to identify patients requiring strict antepartum surveillance for better maternal and perinatal outcome.

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