

# A Hospital based Study Evaluating Oligohydraminous and Its Perinatal Outcome

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## ABSTRACT

**Introduction:** Decrease in the volume of amniotic fluid is known as Oligohydramnios and it is associated with increased risk of intrauterine growth retardation, severe birth asphyxia along with low APGAR scores and congenital abnormalities. The aim of the present study was to determine the incidence of oligohydraminos and its perinatal outcome.

**Material and methods:** The present prospective study was carried out in the Obstetric and Gynae Department in Nepalgunj Medical College and Teaching Hospital Nepalgunj Banke, Nepal during a period of one year. A detailed history along with complete clinical examination was done. All the required investigations were performed. Assessment of gestational age was done. AFI was measured to assess oligohydraminos. All the data was arranged in a tabulated form and analysed using SPSS software. Results were expressed as percentage of the total value.

**Results:** In this study a total of 150 subjects were enrolled over a period of 1 year. Out of these there were 10 who had oligohydraminos. Therefore the prevalence in our study was 6.6%. The mean age of the subjects was 25.43 +/- 4.31 years. Amongst the subjects who had oligohydraminos, there were 20% (n=2) who were aged less than 20 years. Meconium aspiration was seen in 10% (n=1) subject. There were no cases of neonatal sepsis. Apgar score of less than 7 was seen in 10% (n=1) subject at 1 minute and 20% (n=2) subjects at 5 minutes. There was 10% (n=1) neonate who was still born and 20% (n=2) had early neonatal death.

**Conclusion:** The diagnosis of oligohydraminos is done routinely using ultrasound. The detection of this at an early stage is necessary to prevent both maternal and perinatal mortality. The incidence in our study was 6.6%. There was 1 neonate who was still born and 2 had early neonatal death.

**Keywords:** Mortality, oligohydraminos, Perinatal

have higher incidence of developing oligohydramnios due to decline in function of placenta. There is increased risk of potter sequence due to oligohydramnios which consist of a triad of pulmonary hypoplasia that includes skeletal and facial deformities which are due to external compression and abnormal foetal development. 41% of the patients with oligohydramnios undergo caesarean section.<sup>4</sup> oligohydraminos is significantly related to fetal distress, low birth weight infants and caesarean section.<sup>5</sup> Foetal distress during labour is caused due to compression of the umbilical cord. Oligohydramnios is also associated with increased rate of perinatal morbidity and mortality.<sup>6</sup> The aim of the present study was to determine the incidence of oligohydraminos and its perinatal outcome.

## MATERIAL AND METHODS

The present prospective study was carried out in the Obstetric and Gynae Department Nepalgunj Medical College College and Teaching Hospital Nepalgunj Banke, Nepal during a period of one year i.e. April 2016 to April 2017. In this study women with single foetus with intact membrane and gestational age of 30-40 weeks were included in the study. All the subjects were informed about the study and a written consent was obtained from all. The study was also approved by the Institute's ethical board. Women with rupture of membrane, severe pre eclampsia, foetal chromosomal abnormality or post term pregnancy were excluded from the study. A detailed history along with complete clinical examination was done. All the required investigations were performed. Assessment of gestational age was done. AFI was measured to assess oligohydraminos. Management of the patient was done at rest during left lateral position. The uterus was divided into four quadrants for measurement of AFI. Ultrasound, Doppler, biophysical profile were used for monitoring of the foetus. Birth weight, APAGAR score and perinatal mortality were assessed.

## STATISTICAL ANALYSIS

All the data was arranged in a tabulated form and analysed

## INTRODUCTION

Floating bed in the form of amniotic fluid cavity that filled with liquor amnii to fulfill the requirements of fetus and for its existence and growth in sterile environment is nature's way to take care of foetus. It also regulates the temperature, avoids any external injury and reduces the impact of uterine contractions. Decrease in the volume of amniotic fluid is known as Oligohydramnios<sup>1</sup> and it is associated with increased risk of intrauterine growth retardation, severe birth asphyxia along with low APGAR scores and congenital abnormalities.<sup>2</sup> It poses a challenge to obstetrician as it is diagnosed before term. It can develop during any trimester but it is very common during third trimester.<sup>3</sup> There are approximately 12% of women, whose pregnancies continues for two weeks beyond expected date of delivery

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**How to cite this article:** Farhat Banu, Vijay J. Paul, Shakil Ahmad, Ajay Pokhrel. A Hospital based study evaluating oligohydraminous and its perinatal outcome. International Journal of Contemporary Medical Research 2017;4(10):2037-2039.

using SPSS software. Results were expressed as percentage of the total value.

**RESULTS**

In this study a total of 150 subjects were enrolled over a period of 1 year. Out of these there were 10 who had oligohydraminos. Therefore the prevalence in our study was 6.6%. The mean age of the subjects was 25.43 +/- 4.31 years. Amongst the subjects who had oligohydraminos, there were 20% (n=2) who were aged less than 20 years. There were 50% (n= 5) that were between 21-30 years of age. There were 30% subjects who were more than 30 years i.e. 3 subjects. The mean gestational age of the subjects were 34.65 ± 4.25 weeks. There were 20% (n=2) subjects with gestational age between 30-32 weeks. Majority of the subjects i.e. 40% (n=4) had gestational age between 34- 36 weeweeks. There were 10% (n=1) subject each with gestational age between 38-40 weeks and 36-38 weeks. The mean amniotic fluid index was 3.04 +/- 1.01. There were 30% subjects with amniotic fluid index to be 2 and 30% subjects had amniotic fluid index as 4. Only 10% (n=1) subject had amniotic fluid index as 0. 20% (n=2) subjects had amniotic fluid index as 5. The mean parity was 1.3 +/- 1.2. Primigravidae was seen in 60% (n=6) subjects. Multigravidae was seen in 40% (n=4) subjects.(Table 1) Table 2 shows the perinatal outcome of subjects with oligohydraminos. The birth weight of majority of the subjects

was between 2000-3000gms (60%). There were 10% (n=1) subject with birth weight of more than 3000 gms. 30% subjects (n=3) had birth weight between 1000-2000gms. Meconium aspiration was seen in 10% (n=1) subject. There were no cases of neonatal sepsis. Apagar score of less than 7 was seen in 10% (n=1) subject at 1 minute and 20% (n=2) subjects at 5 minutes. There was 10% (n=1) neonate who was still born and 20% (n=2) had early neonatal death.

**DISCUSSION**

Amniotic fluid assessment during antenatal period is considered a diagnostic tool in determination of women who are at risk of adverse perinatal outcome. Oligohydramnios is used as an indicator for this purpose and thus predicting the adverse perinatal outcome.<sup>7</sup> In patients of oligohydraminos there are chances of foetal growth restriction so closer monitoring of fetal growth is necessary because of the associated morbidity.<sup>8</sup>

In the present study, the mean age of the subjects was 25.43 +/- 4.31 years. Amongst the subjects who had oligohydraminos, there were 20% (n=2) who were aged less than 20 years. There were 50% (n= 5) that were between 21-30 years of age. There were 30% subjects who more than 30 years i.e. 3 subjects. The mean gestational age of the subjects were 34.65 ± 4.25 weeks. There were 20% (n=2) subjects with gestational age between 30-32 weeks. Majority of the subjects i.e. 40% (n=4)

Variable		Frequency	Percentage	Mean +/- sd
Maternal age	<20 years	2	20	25.43 ± 4.31
	21-30 years	5	50	
	>30 years	3	30	
Gestational age	30-32 weeks	2	20	
	32-34 weeks	2	20	
	34-36 weeks	4	40	
	36-38 weeks	1	10	
	38-40 weeks	1	10	
Amniotic fluid index	0	1	10	3.04 ± 1.01
	1	0	0	
	2	3	30	
	3	0	0	
	4	3	30	
	5	2	20	
Parity	Primigravidae	6	60	1.3 ± 1.2
	Multigravidae	5	50	

**Table-1:** Biological characteristics of women

Variable		Frequency	Percentage
Birth weight	<1000 gms	0	0
	1000-2000 gms	3	30
	2000-3000 gms	6	60
	>3000 gms	1	10
Neonatal morbidity	Meconium aspiration	1	10
	Neonatal sepsis	0	0
Apgar score (<7)	At 1 min	1	10
	At 5 min	2	20
Perinatal mortality	Still birth	1	10
	Early neonatal death	2	20

**Table-2:** Perinatal outcome

had gestational age between 34- 36 weeks. There were 10% (n=1) subject each with gestational age between 38-40 weeks and 36-38 weeks. The mean amniotic fluid index was 3.04 +/- 1.01. There were 30% subjects with amniotic fluid index to be 2 and 30% subjects had amniotic fluid index as 4. Only 10% (n=1) subject had amniotic fluid index as 0. 20% (n=2) subjects had amniotic fluid index as 5. The mean parity was 1.3 +/- 1.2. Primigravidae was seen in 60% (n=6) subjects. Multigravidae was seen in 40% (n=4) subjects. In a study conducted by Chaudhari KR et al, majority of the (65.3%) women were of the age group of 20-25yrs. There were 64.1% multigravida and 47.4% women were at gestational age between 34-37wks.<sup>9</sup> In similar studies conducted by Chauhan P et. al.<sup>10</sup>, Jun Zhang et. al.<sup>11</sup> and Everett F et. al.<sup>12</sup> 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. According to a study by Bangal VB et al, the perinatal mortality was 24%. Severe cases of oligohydramnios and anhydramnios were found to be associated with intrapartum fetal heart rate abnormalities, there were 16% infants' withlow Apgar score and 8% infants with meconium aspiration syndrome.<sup>13</sup> In the present study, the incidence of oligohydramnios was 0.80%. In a study by Bangal VB et al, it was 0.67%.<sup>13</sup> Studies conducted by Jun Zhang et. al.<sup>11</sup> the incidence was 1.5%, according to Divon M et. al.<sup>14</sup> it was in 1.2% of their cases. In a study conducted by Casey B et al.<sup>4</sup> there were 2.3% cases that were complicated by oligohydramnios. As per the study by Elliot H et. al.<sup>15</sup> the incidence of oligohydramnios was 3.9% in their study. According to Varma T R et. al.<sup>16</sup>, the incidence was 3.1% in their study. In our present study, the birth weight of majority of the subjects was between 2000-3000gms (60%). There were 10% (n=1) subject with birth weight of more than 3000 gms. 30% subjects (n=3) had birth weight between 1000-2000gms. Meconium aspiration was seen in 10% (n=1) subject. There were no cases of neonatal sepsis. Apgar score of less than 7 was seen in 10% (n=1) subject at 1 minute and 20% (n=2) subjects at 5 minutes. There was 10% (n=1) neonate who was still born and 20% (n=2) had early neonatal death. In a study by Bangal VB et al, the mean amniotic fluid index was 3 +/-1.04.<sup>13</sup> A study conducted by Chhabra S et. al.<sup>17</sup> reported a perinatal mortality of 87.7% in their study. As per Wolff F et. al.<sup>18</sup> the perinatal mortality in their study was 7.2%.

## CONSLUSION

The diagnosis of oligohydraminos is done routinely using ultrasound. The detection of this at an early stage is necessary to prevent both maternal and perinatal mortality. The incidence in our study was 6.6%. There was 1 neonate who was still born and 2 had early neonatal death. In every case of oligohydramnios, careful antenatal evaluation along with parental counselling should be done to regarding timing and mode of delivery.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 24-09-2017; **Accepted:** 19-10-2017; **Published:** 01-11-2017