

## A Study of Feto-Maternal Outcome in Pregnancies with Abnormal Liquor

Kranti V. Kendre\*, Shalini S. Gadale\*

### Abstract

*Introduction:* The amniotic fluid, commonly called a pregnant woman's water or waters (Latin liquor amnii), is the protective liquid contained by the amniotic sac of a pregnant female. *Aims and Objectives:* To study feto-maternal outcome in pregnancies with Abnormal Liquor. *Material and Methods:* This was cross-sectional study carried out at the OBGY Dept. of the tertiary health care center during the one year duration i.e. Jan 2015 to Jan 2016 in all ANC patients attending the ANC clinic for routine checkup were advised Gestational; USG those who showing Abnormal (AFI) i.e. Low - Oligohydramnios or High - Polyhydramnios were by their written consent were included study. The detailed history like age and ANC complications (Maternal outcome) and Fetal Outcome were retrieved with the help of record paper available in the record section. *Result:* majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were >30 i.e. 41.82%. In maternal outcome PIH was 31.11 and 30.91; APH was 22.22 and 23.64; PPH-20.00 and 16.36; Pre-term labour -15.56 and 9.09; Abortion - 4.44 and 18.18 in Oligohydramnios and Polyhydramnios Group respectively. The congenital anomalies were more common in Polyhydramnios group as compared to Oligohydramnios

group i.e. 26.67 % and 35.19% respectively. Hydrocephalus was 6.67 and 7.41; Anencephaly-4.44 and 5.56 ; Meningocele-2.22 and 3.70; Spina bifida -2.22 and 3.70; Oesophageal atresia -2.22 and 3.70; Duodenal atresia -2.22 and 3.70; Omphalocele-2.22 and 1.85; Polycystic kidney 2.22 and 1.85; Hydronephrosis with hydroureter -2.22 and 1.85 respectively in Oligohydramnios Polyhydramnios group respectively. *Conclusion:* It can be concluded from our study that majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were >30. majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were >30 i.e. 41.82%. In maternal outcome PIH was most common followed by, APH in Oligohydramnios and Polyhydramnios Group respectively. The congenital anomalies were more common in Polyhydramnios group as compared to Oligohydramnios group these were Hydrocephalus, Anencephaly, Meningocele.

**Keywords:** Feto-Maternal Outcome; Abnormal Liquor; Congenital Anomalies.

### Introduction

The amniotic fluid, commonly called a pregnant woman's water or waters (Latin liquor amnii), is the protective liquid contained by the amniotic sac of a pregnant female. Amniotic fluid protects the developing baby by cushioning against blows to the mother's abdomen, allowing for easier fetal movement and promoting muscular/skeletal development. Amniotic fluid swallowed by the fetus helps in the formation of the gastrointestinal tract. It also

\*Associate professor,  
Department  
Of Obstetrics and  
gynaecology MIMSR  
medical college, Latur  
Maharashtra, India.

**Corresponding Author:**  
Kranti Venkatrao Kendre,  
Associate Professor,  
Department of Obstetrics &  
Gynaecology, MIMSR  
Medical College Latur,  
413512, Maharashtra.  
E-mail:  
drvinayak1@gmail.com

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prevents the fetus from mechanical jerks and shocks. At first, amniotic fluid is mainly water with electrolytes, but by about the 12-14th week the liquid also contains proteins, carbohydrates, lipids and phospholipids and urea, all of which aid in the growth of the fetus. The amniotic fluid volume varies with the gestational age from 200ml at 16 weeks, 1000ml at 28 weeks, 900ml at 36 weeks and 800ml at 40 weeks of gestation [1]. A good clinical examination can pick up most subjects of abnormal liquor volume and can be confirmed by ultrasonographically [2]. As per working definition of liquor assessment an AFI less than 5cm is known as oligohydramnios, AFI 5 to 8 cm have been termed borderline AFI [3]. Antepartum oligohydramnios is associated with increased fetal malformations and in the absence of malformations, to be complicated by fetal growth restriction, maternal morbidity and adverse perinatal outcome [2,4,5]. Hence, every case of oligohydramnios needs careful antenatal evaluation, parental counselling, individualized decision regarding timing and mode delivery, continuous intrapartum fetal monitoring and good neonatal care for optimum perinatal outcome [6].

The importance of amniotic fluid volume as an indicator of fetal wellbeing has made its assessment an important part of antenatal fetal surveillance. Abnormalities such as meconium staining, congenital anomalies, growth retardation, dysmaturity and fetal asphyxia have been associated with reduced amniotic fluid volume [7,9]. Polyhydramnios is sometimes associated with major fetal anomalies [9], aneuploidy, macrosomia and stillbirth [10]. It has been proposed

that amniotic fluid possesses certain bacteriostatic properties that protect against potential infectious processes and that a decrease in amniotic fluid volume may impair the gravid womans' ability to combat such infections [10].

Here we report thefetomaternal outcome in pregnancies with abnormal liquor volume managed at a tertiary care hospital.

### Material and Methods

This was cross-sectional study carried out at the OBGY Dept. of the tertiary health care center during the one year duration i.e. Jan 2015 to Jan 2016 in all ANC patients attending the ANC clinic for routine checkup were advised Gestational; USG those who showing Abnormal (AFI) i.e. Low -Oligohydramnios or High -Polyhydramnios were by their written consent were included study. The detailed history like age and ANC complications (Maternal outcome) and Fetal Outcome were retrieved with the help of record paper available in the record section.

### Result

From above table, it is clear that majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were >30 i.e. 41.82%.

**Table 1:** Distribution of the Patients as per the Age

Age	Oligohydramnios	Polyhydramnios
15-20	9(20.00)	6 (10.91)
21-25	25 (55.56)	11 (20.00)
26-30	7 (15.56)	14 (25.45)
>30	4 (8.89)	23 (41.82)
Total	45 (100)	54 (100)

**Table 2:** Maternal Outcome/Complications

Maternal outcome	Oligohydramnios	Polyhydramnios
PIH	14 (31.11)	17 (30.91)
APH	10 (22.22)	13 (23.64)
PPH	9 (20.00)	9 (16.36)
Pre-term labour	7 (15.56)	5 (9.09)
Abortion	2 (4.44)	10 (18.18)
Total	45 (100)	54 (100)

In maternal outcome PIH was 31.11 and 30.91; APH was 22.22 and 23.64; PPH-20.00 and 16.36; Pre-term labour -15.56 and 9.09; Abortion -4.44 and 18.18

in Oligohydramnios and Polyhydramnios Group respectively.

The congenital anomalies were more common in

**Table 3:** Fetal Outcome/Complications

Fetal Outcome	Oligohydramnios (n=45)	Polyhydramnios (n=54)
Hydrocephalus	3 (6.67)	4 (7.41)
Anencephaly	2 (4.44)	3 (5.56)
Meningocele	1 (2.22)	2 (3.70)
Spina bifida	1 (2.22)	2 (3.70)
Oesophageal atresia	1 (2.22)	2 (3.70)
Duodenal atresia	1 (2.22)	2 (3.70)
Omphalocele	1 (2.22)	1 (1.85)
Polycystic kidney	1 (2.22)	1 (1.85)
Hydronephrosis with hydroureter	1 (2.22)	1 (1.85)
Total	12 (26.67)	19 (35.19)

Polyhydramnios group as compared to Oligohydramnios group i.e. 26.67% and 35.19% respectively. Hydrocephalus was 6.67 and 7.41; Anencephaly -4.44 and 5.56 ; Meningocele-2.22 and 3.70; Spina bifida -2.22 and 3.70; Oesophageal atresia -2.22 and 3.70; Duodenal atresia -2.22 and 3.70; Omphalocele-2.22 and 1.85; Polycystic kidney 2.22 and 1.85; Hydronephrosis with hydroureter -2.22 and 1.85 respectively in Oligohydramnios Polyhydramnios group respectively.

## Discussion

The amniotic fluid that surrounds the fetus serves several roles during pregnancy. It creates physical space for musculoskeletal development, promotes normal fetal lung development and helps to avert compression of the umbilical cord [11]. The amniotic fluid volume at each week of pregnancy is variable. It increases from 20ml at 10 weeks to 770ml at 28 weeks, remains at a steady state till 39 weeks, after which decreases dramatically. The average Amniotic fluid volume in third trimester is 700-800 ml [2]. Polyhydramnios is diagnosed when the deepest vertical pool of amniotic fluid is 8cm or greater, amniotic fluid index measured by Phelan's technique above 25cm/ 95<sup>th</sup> percentile. Incidence is around 1% of all pregnancies. The etiology of polyhydramnios is diverse and involves many maternal and fetal conditions including diabetes mellitus, congenital anomalies, isoimmunisation, multiple gestation and placental abnormalities. Half of cases are found to be idiopathic [1]. Premature labour complicated 40% of polyhydramnios patients [3]. Oligohydramnios is diagnosed when ultrasonographically the AFI is  $\leq$  5cm/ 5<sup>th</sup> centile, or a single deepest pocket of 2cm [11]. It affects 3-5% of pregnancies [12]. Oligohydramnios is associated with high risk adverse perinatal outcome like fetal distress, meconium staining, low apgar and neonatal resuscitation/ NICU admission but is a poor predictor.

Oligohydramnios is often used as an indicator for delivery.

In our study we have found that majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were  $>$ 30 i.e. 41.82%. Maternal outcome PIH was 31.11 and 30.91; APH was 22.22 and 23.64; PPH-20.00 and 16.36; Pre-term labour -15.56 and 9.09; Abortion - 4.44 and 18.18 in Oligohydramnios and Polyhydramnios Group respectively.

Congenital anomalies were more common in Polyhydramnios group as compared to Oligohydramnios group i.e. 26.67% and 35.19% respectively. Hydrocephalus was 6.67 and 7.41; Anencephaly -4.44 and 5.56 ; Meningocele-2.22 and 3.70; Spina bifida -2.22 and 3.70; Oesophageal atresia -2.22 and 3.70; Duodenal atresia -2.22 and 3.70; Omphalocele-2.22 and 1.85; Polycystic kidney 2.22 and 1.85; Hydronephrosis with hydroureter -2.22 and 1.85 respectively in Oligohydramnios Polyhydramnios group respectively. These findings are similar to Guin Gita et al (2009) [13], 200 pregnant women with 20-42 weeks of gestation who were clinically suspected to have abnormal fluid volume were subjected to USG for AFI and observed closely, found that it is associated with increased incidence of complications in labour, cesarean rates and adverse perinatal outcome.

Nazlima et al. (2012) [14] studied 78 singleton pregnancies with gestational age of 28-42 weeks with low AFI for perinatal outcome in Jan-Dec 2009, concluded that isolated Oligohydramnios is associated with high rate of pregnancy complications and increased perinatal mortality and morbidity. Such women should be managed in a special unit to combat complications effectively.

## Conclusion

It can be concluded from our study that majority of the patients with Oligohydramnios were in the age

group of 21-25 were 55.56% where for Polyhydramnios were >30. majority of the patients with Oligohydramnios were in the age group of 21-25 were 55.56% where for Polyhydramnios were >30 i.e. 41.82%. In maternal outcome PIH was most common followed by, APH in Oligohydramnios and Polyhydramnios Group respectively. The congenital anomalies were more common in Polyhydramnios group as compared to Oligohydramnios group these were Hydrocephalus, Anencephaly, Meningocele.

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