

## Clinical Study to Evaluate the Perinatal Outcome of Pregnancies with Polyhydramnios in Tertiary Care Center

Alka B Patil<sup>1</sup>, Sara Shaikh<sup>2</sup>, Amol Koranne<sup>3</sup>

### Author's Affiliation:

<sup>1</sup>Professor and Head, <sup>2</sup>Junior Resident, <sup>3</sup>Assistant Professor, Department of Obstetrics and Gynecology, ACPM Medical College, Dhule, Maharashtra 424002, India.

### Corresponding Author:

Alka B Patil, Professor and Head, Department of Obstetrics and Gynecology, ACPM Medical College, Dhule, Maharashtra 424002, India.

E-mail: [alkabpatil@rediffmail.com](mailto:alkabpatil@rediffmail.com)

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### Abstract

**Objectives:** To find out the perinatal outcome of pregnancies with polyhydramnios. **Methods:** This is a retrospective study carried out at ACPM Medical College Dhule. 100 pregnant women who were diagnosed with polyhydramnios by USG from 24 weeks onwards till 40 weeks were followed for risk factors, complications, incidence of fetal congenital anomaly, severity of polyhydramnios, mode of delivery and neonatal outcome. **Result:** Study showed that the incidence of polyhydramnios was higher in 20-30 years of age group. 83% were multi and 17% were primi. 65% were delivered at term, 35% were preterm labour. 63% patient delivered vaginally and 37% by C-section. 29% neonates were associated with congenital anomalies, of which 14% were associated with spina bifida, 6% with diaphragmatic hernia, 4% with hydrocephalus, 3% with anencephaly and 2% with oesophageal atresia. Perinatal death rate is 12%. **Conclusion:** A good clinical examination can usually identify subjects with polyhydramnios. Every case of polyhydramnios needs careful antenatal evaluation, parental counselling, individualized decision regarding timing and mode of delivery. Continuous intrapartum fetal monitoring and good neonatal care are necessary for better perinatal outcome.

**Keywords:** Polyhydramnios; Perinatal outcome; Preterm labor; Congenital anomalies.

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### Introduction

Just as our ancestors crawled out of ocean to life on earth we too, until birth, will float in amniotic fluid. It provides temperature, stability, cushioning and a necessary presence in collapsed away to help stimulate lung development. The importance of amniotic fluid volume as an indicator of fetal well being has made its assessment an important

part of antenatal fetal surveillance. The aquatic environment of the foetus has long remained enigma to the patient and obstetrician. Due to active involvement of the fetal system in regulation of amniotic fluid volume, it has been identified as indicator of fetal status.<sup>1</sup> Polyhydramnios clinically defined as the excessive accumulation of the liquor amnii causing discomfort to the patient and are when an imaging help is needed to substantiate

the clinical diagnosis of the lie and presentation.<sup>2</sup> Diagnosis of polyhydramnios is typically made sonographically by evaluating the single deepest pocket (SDP)<sup>3</sup> or amniotic fluid index (AFI).<sup>4,6</sup>

The amniotic fluid volume arises from 25 ml at 10 weeks to 400 ml at 20 weeks and plateaus at about 800 ml at 28 weeks to decrease around term.<sup>7,8</sup> Polyhydramnios is defined as the AFI more than or equal to 25 cm or SDP more than or equal to 8 cm or AFI more than 95<sup>th</sup> percentile for gestational age. The perinatal morbidity and mortality are significantly increased with polyhydramnios. Fetal condition that are associated with polyhydramnios include:

1. Open neural tube defects
2. Upper gastrointestinal tract obstructions and malformations
3. Immunological and nonimmunological forms of hydrops Fetalis. There is increased neonatal and maternal morbidity and mortality associated with polyhydramnios. Spontaneous preterm labour may occur, the membranes may rupture suddenly and there is risk of prolapse of umbilical cord. Because the foetus is unduly mobile, Malpresentation may occur. A large quantity of amniotic fluid escape suddenly, the placental site may diminish in area and this can lead to abruptio placenta and may cause fetal death.

The perinatal mortality is greatly increased with polyhydramnios because there may be a foetal abnormality and because of the possibility of preterm labour, cord prolapse and malpresentation.<sup>9</sup>

#### *Aims and objectives*

to determine the relationship between amniotic fluid volume and perinatal outcome of pregnancies complicated by polyhydramnios.

#### **Materials and methods**

Present study was retrospectively conducted in the Department of Obstetrics and Gynaecology at JMF's ACPM Medical College, Dhule from June 2016 to June 2018. Pregnant women attending outpatient department as well as women admitted to obstetric ward and Labour room were enrolled in the study after taking written informed consent. A thorough obstetric ultrasound examination was done using a curvilinear array transducer of 3.5 mhz. Assessment of amniotic fluid volume was

done by using ultrasound. Polyhydramnios was diagnosed when AFI was more than 95<sup>th</sup> percentile for gestational age. Standard foetal biometric data was obtained Fetal lie, presentation, position, assessment of gestational age and placental site were determined. A systemic fetal organ review was performed to detect any gross congenital anomaly. Pregnancy outcome was recorded for patient who were classified as having polyhydramnios. careful history was taken from all women: particularly age, previous obstetric history, obstetric complications, last menstrual period and previous history of congenital abnormality. A thorough clinical examination including blood pressure and presence of pedal edema was done. Obstetric examination for gestational age, presentation, amount of liquor was done and FHS were auscultated. Baseline investigations like hemoglobin, blood grouping and typing, complete urine examination, blood sugar fasting and postprandial HbsAg, HIV were done.

#### *Inclusion criteria*

1. Registered patients
2. Women with singleton pregnancy or multiple gestation with reliable dates and ultrasound.
3. Pregnancies with AFI more than 25 cm.
4. Women with gestational age between 24 and 40 weeks of gestation.
5. Pregnant women of any age and parity were taken into consideration.

#### *Exclusion criteria*

1. Pregnancy with unknown LMP.
2. Pregnancy with over distended abdomen other than polyhydramnios.
3. Pregnant women with diagnosed uterine anomaly.

#### **Result**

This study was retrospectively conducted on 100 cases diagnosed as polyhydramnios on the basis of amniotic fluid index.

**Table 1:**

Severity of polyhydramnios	Percentage of cases
Mild (AFI 25-30 cm)	78
Moderate (AFI 30-35 cm)	16
Severe (AFI >35cm)	6

In the present study 78% had mild polyhydramnios (AFI 25 to 30 cm), 16% had moderate polyhydramnios (AFI 30–35 cm) and 6% had severe polyhydramnios (AFI >35 cm). (Table 1).

**Table 2:**

Perinatal complications associated with polyhydramnios	Percentage of cases
Preterm labour	35
Malpresentation	10
Cord Prolapse	1

Thirty five percent of patients were complicated by preterm delivery, 10% by fetal malpresentation and malposition, 1% by cord prolapse (Table 2).

**Table 3:**

Fetal malposition and malpresentation	Number of cases
Face	3
Breech	3
Compound presentation	2
Occipito-posterior position	2

Out of 10 cases of fetal malposition and malpresentation 3 cases were with face presentation, out of which two were associated with anencephaly and all three were delivered vaginally. There were 3 cases with breech presentation, 2 delivered vaginally and 1 underwent cesarean section for coexistent CPD (Table 3).

**Table 6:**

Type of delivery	Number of cases
Vaginal	63
Cesarean section	37

Above table 6 shows that 63 cases were delivered vaginally and 37 cases required C section, because

**Table 4:**

Fetal congenital anomalies associated with polyhydramnios	Percentage of cases
Spina Bifida	14
Diaphragmatic hernia	6
Hydrocephalus	4
Anencephaly	3
Oesophageal atresia	2

Majority of congenital anomalies were of central nervous system. 14% foetuses had spina bifida followed by 6% with diaphragmatic hernia 4% had hydrocephalus, 3% anencephaly and 2% had esophageal atresia (Table 4).

**Table 5:**

Gestational age at diagnosis of anomaly	Number of cases
24–27 weeks	8
28–32 weeks	8
33–37 weeks	13
37–40 weeks	-

The Table 5 shows that the majority of congenital anomalies were diagnosed beyond 32 weeks of gestation. only 8 each were diagnosed between 24 to 27 and 28 to 32 weeks of gestation, while 13 cases with anomalies were diagnosed beyond 32 weeks All the anomalies Were diagnosed in the first antenatal scan (Table 5)

**Table 7:**

Fetal outcome	Severity of polyhydramnios			Total
	Mild	Moderate	Severe	
Alive at birth	73	12	3	88
Perinatal death	5	4	3	12

Table 7 shows association between fetal outcome and severity of polyhydramnios. Majority of the cases of mild polyhydramnios had live babies. The same hold good with moderate polyhydramnios in which 12 babies were live born, however in severe polyhydramnios the majority of babies born alive

of fetal distress, CPD, compound presentation, previous cesarean section, big baby (Table 6)

had early neonatal death and hence contributed significantly to perinatal mortality. Total number of babies born alive were 88. perinatal death were 12 because of fetal congenital anomalies, intrauterine demise, prematurity and birth asphyxia.

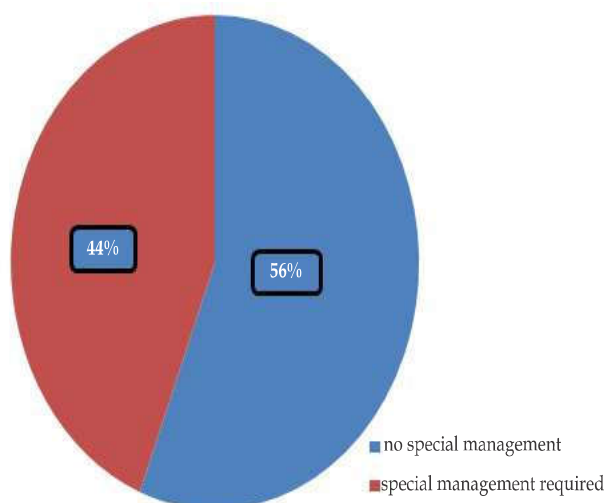


Fig. 1:

Distribution of newborn according to special management provided (Fig. 1).

Table 8: Percentage distribution of newborn according to type of special management provided.

Type of special management	Percentage of cases requiring special management
Incubated	25
Correction of hypoglycemia	12
Surgical correction	22
Intubation	20
Observation in nursery	21

Fifty-six percent of newborn did not require any special management while 44% of them received special management (Table 8). The type of special management received were as follow:-

1. 25% managed in incubators.
2. Hypoglycemia was corrected in 12%.

3. 22% managed surgically.
4. 20% cases were incubated .
5. 21% admitted in nursery for observation.

### Discussion

Polyhydramnios is one of the alarming sign of pregnancy, which necessitates a proper assessment in specialised centre, as it is associated with high perinatal mortality and morbidity.

In the era of bioethics, the concept of foetus as ‘The Unborn patient’ has developed. Good antenatal care and fetal surveillance, early detection of high risk pregnancies and timely intervention will go a long way in optimising neonatal outcome.

The incidence of preterm labour in our study is

Table 9:

Perinatal complications	Incidence		
	Shruti saraliya <i>et al.</i>	Gudena samayukta <i>et al.</i>	Present study
Preterm labour	18%	5%	35%
Fetal malposition and mal presentation	16%	13.75%	10%
Cord Prolapse	4%	-	1%

35% comparable to studies by Shruti saralaya *et al.* 25% cases had PROM which is comparable to studies by Shruti saralaya *et al.* where the incidence is 24%<sup>12</sup>. In our study 10% cases were complicated by fetal malpresentation and malposition ,which is comparable to 16% and 13.7 5% in study conducted

by Shruti Saralaya *et al* and Gudena Samayukta *et al.* In study conducted by Singh Richa *et al.* (2013)<sup>13</sup> 64.0 6% cases delivered vaginally and 35.9 4% had C section, which is comparable to our study where 63% woman delivered vaginally and 37% had C section (Table 9).

Table 10:

Fetal congenital anomaly associated with polyhydramnios	Percentage of cases	
	Sudha chaurasia <i>et al.</i>	Present study
Spina bifida	0.9%	14%
Diaphragmatic hernia	0.9%	6%
hydrocephalus	1.8%	4%
anencephaly	11%	3%
Oesophageal atresia	0.9%	2%

In our study the majority of congenital anomalies found were of the central nervous system that is spina bifida in 14% of cases. In the study conducted by Sudha Chaurasia *et al.* also the major anomalies were from central nervous system only and the major anomaly found in their study is anencephaly that is 11% (Table 10).

### Conclusion

Pregnancy and child bearing are attended by certain risk to the mother as well as the foetus. The aim of the obstetrician is to improve our management of the high risk pregnancy and optimise the outcome of pregnancy. Incidence of congenital anomalies is increased in pregnancies associated with polyhydramnios. Early diagnosis, aided by good antenatal care, timely referral to higher centers, use of sophisticated technology will reduce the neonatal mortality. Counseling is an important aspect of management of high risk pregnancies like polyhydramnios.

### References

1. Chaurasia S, Agarwal J, Badole M. Clinical study to evaluate the maternal and perinatal outcome of pregnancies with polyhydramnios. *Journal of evolution of Medical and Dental Sciences*. 2013 Oct 14;2(41):7972-77.
2. Daftary S, Bhide A. Practical guide to high risk pregnancy and delivery." Fernando Arias, 3<sup>rd</sup> edi, pg no 100-102.
3. Manning FA, Platt LD, Sipos L. Antepartum fetal evaluation; development of a fetal biophysical profile. *Am J Obstet Gynecol*. 1980;136:787-795.
4. Phelen JP, Smith CV, Broussard P. *et al.* Amniotic fluid volume assessment with four quadrant technique at 36-42 weeks gestation. *J Report Med*. 1987;32:540-542.
5. Ruderford SE, Smith CV, phelan JP *et al.* Four quadrant assessment of amniotic fluid volume. Interobserver and Intraobserver variation. *J Reprod med*. 1987;32:587-89.
6. Moore TR. Clinical assessment of amniotic fluid volume. *Clin Obstet Gynecol*. 1997;40:303-13.
7. Megann EF, Perry KG Ju, Chauhan SP *et al.* The accuracy of ultrasound evaluation of amniotic fluid volume in singleton pregnancies:the effect of operator experience and ultrasound interpretative technique. *J Clin ultrasound*. 1997;25:249-253.
8. Brace RA, Wolf EJ. Normal amniotic fluid volume changes throughout pregnancy. *Am J Obstet Gynecol*. 1989;161:382-88.
9. Geoffrey VP chamberlain. polyhydramnios and oligohydramnios. obstetrics by TEN Teachers. 6<sup>th</sup> edition. Educational low-priced book scheme Great Britain; 1996; 97.
10. Fawad A, Shamshad Danish N. Frequency, causes and outcome of polyhydramnios. *Gomal Journal of Medical Sciences*. 2008 Jul-Dec;6(2):106-09.
11. Gudena Samukta, N Uma, S Rao. Polyhydramnios ultrasonographically detected incidence and neonatal outcome. *IUSR Journal of dental and Medical Sciences*. 16(1):16-22.
12. Saralaya S, Manohar R, Mithra VP, *et al.* Arun Rao. Does polyhydramnios have any impact on the maternal outcome? *J pharma biomed research*. 2013;4(4):234-37.
13. Singh R, Yadav SS, Poonam, *et al.* Study of Association of polyhydramnios with maternal and perinatal outcome. *Journal of evolution of Medical and Dental Sciences*. 2013 Dec 23;2(51):10002-08. DOI:10-14260/Jemds/1724.