



## Original Research Article

# Perinatal Outcome in Pregnancies with Polyhydramnios

Authors

**Manjula Madhavan Pillai<sup>1</sup>, Reddy Rani P<sup>2</sup>**

<sup>1</sup>Assistant Professor, Department of O&G, Govt. Medical College, Thiruvananthapuram.

<sup>2</sup>Professor (Retd), Department of O&G, JIPMER, Pondicherry

\*Corresponding Author

**Dr Manjula M**

Email: [drmanjuabhilash@gmail.com](mailto:drmanjuabhilash@gmail.com)

### Abstract

*Polyhydramnios is defined as an amniotic fluid volume of more than 2000 ml, is confirmed ultrasonographically by single vertical pocket more than 8cm or amniotic fluid index more than 25 cm. Polyhydramnios complicates 0.4-1.2% of all pregnancies and is associated with maternal, fetal and neonatal complications.*

**Aim:** *To study the perinatal outcome in pregnancies with hydramnios.*

**Methodology:** *This was a prospective descriptive study conducted in JIPMER over a 2year period. 100 cases of polyhydramnios cases confirmed with an ultrasonographic finding of single vertical pocket more than 8 cm or amniotic fluid index more than 25 were included in the study.*

**Results:** *In our study out of hundred deliveries, we had 106 babies including 6twin deliveries. There were total 36 perinatal deaths (33.96%). The major contributor (52.77%) of perinatal mortality was associated fetal congenital anomalies. Among 106 babies, 40 babies (37.73%) had congenital anomalies. Most commonly affected system was central nervous system (52.5%). Other anomalies involved gastrointestinal (17.5%) and genitourinary tract (10%). The common CNS malformations found were hydrocephalous and anencephaly.*

**Conclusion:** *Polyhydramnios is associated with increased perinatal morbidity and mortality. Once detected with ultrasound, a detailed evaluation of fetus for congenital anomalies should be looked for. Management of the underlying cause of hydramnios can to some extent prevent perinatal complications.*

### Introduction

Amniotic fluid serves as an indicator of fetal well being. Polyhydramnios is defined as amniotic fluid volume more than 2000ml<sup>(1)</sup>. Polyhydramnios occur in 0.4 to 1.2% of all pregnancies<sup>(2)</sup>. Fetal and maternal causes account for 30-40% of cases, where as 60-70% are idiopathic<sup>(3)</sup>. An abnormal increase in amniotic fluid volume has

been associated with increased frequency of both maternal and fetal complications. The common contributory factors for increased perinatal morbidity and mortality are its increased association with fetal anomalies and prematurity. So it is important to diagnose this condition in the antenatal period itself.

**Aims and objectives**

To assess the perinatal outcome in patients diagnosed to have hydramnios

**Materials and Methods**

This was a prospective descriptive study conducted in the department of Obstetrics and Gynecology, JIPMER for a period of 2 years. All pregnant women between 20-42 weeks of gestation attending OPD or seen in casualty detected to have polyhydramnios clinically were evaluated by Hitachi EUB -315 scanner using linear and sector probe of 3.5 MHz frequency.

**Inclusion criteria-** Singleton or multiple pregnancy of gestational age 20-42 weeks with clinically diagnosed hydramnios

**Exclusion criteria-** 1.rupture of membranes  
2.gestational age <20weeks

With the patient lying supine, using a curvilinear or sector transducer amniotic fluid pockets were measured. Uterus is arbitrarily divided into 4 quadrants using the maternal sagittal midline vertically and a transverseline approximately half way between pubic symphysis and upper edge of uterine fundus. The deepest obstructed and clear pocket of amniotic fluid is visualised and image frozen. Ultrasound calipers are manipulated to measure the pocket in a strictly vertical direction. The process is repeated in each of the four quadrants and fluid pocket measurements are summed and this gives amniotic fluid index. Maximum vertical pocket of amniotic fluid of 8cm or more was taken as polyhydramnios. These patients were followed up during pregnancy and labour. The mode and gestational age of delivery were based on obstetric criteria. Patients diagnosed with major fetal congenital malformations not compatible with life such as anencephaly were induced soon after diagnosis. The perinatal outcome was studied in the patients irrespective of the mode of delivery. Babies with correctable congenital anomalies were referred to the department of pediatric surgery. Appropriate surgery was done and babies were subsequently followed up.

**Results**

In our descriptive study a total of 100 patients were included of which 6 cases were twin pregnancies. The diagnosis of polyhydramnios was confirmed using ultrasonological criteria, using single vertical pocket and/ or amniotic fluid index. A detailed ultrasonographic evaluation of the fetus for structural anomalies was done. These patients were followed up during pregnancy and labour.

Out of 106 babies delivered, there were 36 perinatal deaths (33.96%), of which 23(63.88%) were fresh stillborn, 5 (13.88%) macerated still born and 8 (22.22%) neonatal deaths. Among 36 perinatal deaths, 18(50%) had birth weight less than 1500gm. The major cause of perinatal deaths in our study group was fetal congenital anomalies (52.77%). Other causes included prematurity (5), hydrops fetalis (5) and respiratory distress (3)

Among 106 babies, 40 babies (37.73%) had congenital anomalies. The diagnosis was made by ultrasound and clinical examination of the infant after delivery. Most commonly affected system was central nervous system (52.5%). Other anomalies involved gastrointestinal (17.5%) and genitourinary tract (10%). The common CNS malformations found were hydrocephalous (10) and anencephaly (9). Six babies had gastrointestinal anomalies of which two babies had trachea-esophageal fistula and another two had diaphragmatic hernia. 5 babies had features of hydrops fetalis.

Out of 36 perinatal deaths, autopsy could be done in 5 and the rest parents did not permit. One of the babies who died after birth was found to have hypoplastic lungs at autopsy.

Birth weight(kg)	No: of babies	FSB	MSB	NND	prematurity	Resp distress	Hydrops fetalis	Twin-twin transfusion	Associated anomalies	Unknown cause
0.5-1.0	8	6	1	1	1	0	0	0	7	0
1.1-1.5	10	4	1	3	3	1	00	1	3	0
1.6-2.0	15	7	0	3	1	1	0	0	7	1
2.1-2.5	16	4	2	0	0	0	3	0	2	1
2.6-3.0	19	1	0	0	0	0	0	0	0	1
3.1-3.5	26	1	0	0	0	0	1	0	0	0
3.6-4.0	8	0	0	0	0	0	0	0	0	0
>4	4	0	1	1	0	1	1	0	0	0
Total	106	23	5	8	5	3	5	1	19	3

Anomalies	No ( total N=40)
Central nervous system anomalies	21(52.5%)
Hydrocephalous	6
Hydrocephalous+sacralmeningocele	2
Hydrocephalous +spina bifida	2
Anencephaly	6
Anencephaly+meningocele+encephalocele	2
Anencephaly+spina bifida	1
Microcephaly+encephalocele+cervicalmeningocele	1
Microcephaly+exomphalos+iniencephaly+low set ears	1
Gastrointestinal tract anomalies	7(17.5%)
Tracheoesophageal fistula	2
Diaphragmatic hernia	2
Omphalocele	1
Exomphalos	1
hepatomegaly	1
Genitourinary tract anomalies	4(10%)
Polycystic kidneys	1
Micropenis	1
Ambiguous genitalia + hypospadias	1
Micropenis+hypoplasticscrotum+micrognathia+CTEV	1
Others	8(20%)
Hydrops fetalis	5
Pierre Robin syndrome	2
Micrognathia	1

**Discussion**

In our study out of hundred deliveries, we had 106 babies (6 twin deliveries). there were 36 perinatal deaths (33.96%) in our patients with hydramnios - 23 fresh still births, 5 macerated still births and 8 neonatal deaths. Majority of them (50%) was associated with fetal congenital anomalies <sup>(19)</sup>. Among 36 perinatal deaths,18 (50%) had birth weight less than 1500gm. Paning Kemp et al<sup>(4)</sup> found that among pregnancies complicated by idiopathic polyhydramnios, there was no increase in preterm deliveries, low birth weight, low Apgar scores, neonatal intensive care unit admission or perinatal mortality rate. Biggio et al <sup>(5)</sup> found in their comparative study that the perinatal mortality in women with hydramnios was 49 per 1000 births compared with 14 per 1000 births in the control group.N. Kouamé et al<sup>(6)</sup> found that in polyhydramnios cases, perinatal death rate was 28% and majority of the deaths was due to lethal congenital anomalies which was consistent with our study. Another study by Gita Guin et al<sup>(7)</sup>

found that the perinatal mortality was higher (42.25%).

Out of 106 babies, 40 babies (37.73%) had associated congenital anomalies in our study. Hydrocephalous and anencephaly were the most common anomalies .Six babies had gastrointestinal anomalies, of which 2 were tracheoesophageal fistula. Both the babies were taken up for surgery, but died on first and second postoperative day. Two babies had congenital diaphragmatic hernia of which one underwent surgery, but died after 2 days .One baby had omphalocele and another one had exomphalos. Two babies had micro penis, one had polycystic kidney and another baby had ambiguous genitalia. Other anomalies detected were hydrops fetalis, Pierre Robin syndrome and bilateral congenital talipes equinovarus.

N. Kouamé et al<sup>(6)</sup> found in their study that 76.4% polyhydramnios cases were associated with fetal malformations.In 60% of them they were major fetal malformations and rest 40% were minor

ones. The common fetal malformations observed were neural tube defects like anencephaly, spina bifida, hydrocephalus etc. In a study conducted by Desmedt et al<sup>(8)</sup> in 537 cases of polyhydramnios, 18% had associated congenital anomalies of which 31% involved CNS almost half were anencephaly. 11.5% had musculoskeletal anomalies, 10% had GIT anomalies and 9% had CVS anomalies. Ben Chetrit et al<sup>(9)</sup> found that 20% of cases were associated with congenital malformations. Gastrointestinal anomalies were the commonest (39%) and these included duodenal atresia, diaphragmatic hernia, esophageal atresia and omphalocele. CNS anomalies represented only 26% of the anomalies, of which anencephaly was the most common. Cardiovascular and urinary system anomalies constituted 35% of the anomalies. Carlson et al<sup>(3)</sup> found that 44% of their patients had a recognized fetal malformation, of which 27% had fetal aneuploidy, of which 3 had trisomy 18, 3 were found to have hydrocephalous, 2 had tracheoesophageal fistula and 2 had ventricular septal defect. Gita Guin et al<sup>(7)</sup> found that the incidence of congenital anomalies in their study was 31.1%, the common anomalies being hydrocephalus (5/14), anencephaly (3/14), spina bifida (2/14) and duodenal atresia (2/14).

### Conclusion

Polyhydramnios is associated with maternal, fetal and neonatal complications. Clinical suspicion and ultrasonographic confirmation of hydramnios point towards the need for detailed maternal and fetal evaluation to find out the aetiology and manage them to reduce the complications. So identification and evaluation of increased amniotic fluid volume is considered an important component of antenatal assessment.

### References

1. Queenan J, Gadow E. Polyhydramnios: Chronic versus acute. *Am J Obstet Gynecol* 1970;108:349-355.
2. Macafee CHG. *J Obstet Gynaecol Br Emp* 1950; 57 : 171.
3. Carlson DE, Platt LD, Medearis AL, Hornstein J. quantifiable polyhydramnios Diagnosis and management. *Obstet Gynecol* 1990; 75 : 989-993.
4. Panting- Kemp A, Nguyen T, Chang E, Quillen E, Castro L. Idiopathic hydramnios and perinatal outcome. *Am J Obstet Gynecol* 1999;181: 1079-1082
5. Biggio JR, Wenstrom KD, Dubarb MB, Cliver SP. Hydramnios prediction of adverse perinatal outcome. *Obstet Gynecol* 1999; 94: 773-777
6. N. Kouamé, A.M. N'goan-Domoua, Z. Nikiéma, A.N. Konan, K.E. N'guessan, A. Sétchéou, Z.O. Tra-Bi, R.D. N'gbesso, A.K. Kéita Polyhydramnios: A warning sign in the prenatal ultrasound diagnosis of foetal malformation e, Volume 94, Issue 4, April 2013, Pages 449-453
7. Gita Guin, Shweta Puneekar, Arvind Lele, Shashi Khare A Prospective Clinical Study of Feto-Maternal Outcome in Pregnancies with Abnormal Liquor Volume *J Obstet Gynaecol India*. 2011 Dec; 61(6):652-655.
8. Desmedt EJ, Henry OA, Beischer NA. Polyhydramnios and associated maternal and fetal complications in singleton pregnancies *Br J Obstet Gynaecol* 1990; 97:1115-22.
9. Chetrit AB, Celnikier DH, Ron M, Yagel S. Hydramnios in the third trimester of pregnancy: A change in the distribution of accompanying fetal anomalies as a result of early ultrasonographic prenatal diagnosis. *Am J Obstet Gynecol* 1990; 162(5):1344-5.