



**ORIGINAL RESEARCH PAPER**

**Obstetrics and gynaecology**

**CLINICAL STUDY OF FETOMATERNAL OUTCOME IN PREGNANCIES WITH POLYHYDRAMNIOS.**

**KEY WORDS:**

polyhydramnios, anencephaly, congenital anomalies, malpresentation.

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**ABSTRACT**

**Background:** Polyhydramnios is an obstetrical condition associated with significant perinatal and maternal morbidity and mortality. Maternal medical conditions are well known to be associated with polyhydramnios. With the advent of ultrasonography the diagnosis of polyhydramnios has been easy and better.

**Objectives:** By diagnosing these cases early as possible maternal complications can be prevented and advise proper perinatal counselling in relevant cases.

**Methods:** it was a prospective observational study was conducted in obstetrics and gynaecology department, Narayana medical college and hospital Nellore over a period of 1 year from October 2020 to October 2021.

**Results:** polyhydramnios is commoner in primigravida. causative factors are mainly idiopathic after which the most important is fetal defects. Preeclampsia was the commonest medical condition associated in 18.3% followed by anemia in 15% and diabetes in 10%. Complications that occurred as a result were preterm labor in 8.3%, premature rupture of membranes in 6.6% and malpresentations in 5%. Commonest fetal congenital anomaly was anencephaly in 8.3% followed by cleft lip and cleft palate in 6.6%.

**Conclusion:** In our study idiopathic polyhydramnios was found to be the most common cause of polyhydramnios. Early diagnosis with careful screening, timely referral, termination if needed and good management in labor to avoid complications are keys to deal with a polyhydramnios patient.

**INTRODUCTION:**

Polyhydramnios is defined as deepest vertical pocket [ DP] more than or equal to 8cm or amniotic fluid index [AFI] equal or more than 24cm or AFI above the 95<sup>th</sup> percentile for gestational age. Amniotic fluid is both maternal and fetal in origin. In normal pregnancy amniotic fluid allows the fetus a room for growth, movement and development. It protects the fetus from sudden jerks and serves as a cushion. The normal amount of amniotic fluid is reflection of balance between production and removal of amniotic fluid. It is produced from fetal urine, secretions from fetal urinary tract, oral secretions and removal is through fetal swallowing.

The technique of four quadrant method of calculating amniotic index described by Phelan et al in 1987 is accepted as most reliable. AFI is determined by directly measuring the vertical pocket [ free of any fetal part] in four quadrants of abdomen in a pregnant women. Polyhydramnios can be classified as mild, moderate, severe according to AFI 24-29.9cm, 30.0-34.9cm and 35cm or more respectively. It is observed that with increasing severity of polyhydramnios, percentage of anomalous fetus increases.

In the absence of maternal, fetal or placental aetiology, polyhydramnios is termed as idiopathic, accounting for 50-60% of all cases. Perinatal morbidity and mortality are significantly increased by certain complications like malpresentations, preterm labor, premature rupture of membranes, cord prolapse. Uterine inertia, retained placenta and postpartum haemorrhage are expected complications during labor. Fetal conditions associated with polyhydramnios include major congenital anomalies [open neural tube defects, upper gastrointestinal tract obstruction or malformation] and both immunological and nonimmunological forms of hydrops foetalis.

Our study aims at determining the outcomes, both fetal and maternal in pregnant patients with polyhydramnios. So that by diagnosing these cases as early as possible and there by preventing the maternal complications and do the proper prenatal counselling in the relevant cases.

**MATERIAL AND METHODS:**

The study was conducted in Department of Obstetrics and

Gynaecology, Narayana medical college and hospital, Nellore.

**STUDY DESIGN:**

It was a prospective observational study of 60 cases of polyhydramnios, carried out between the period October 2020 to October 2021 in Narayana hospital, Nellore.

**DATA COLLECTION:**

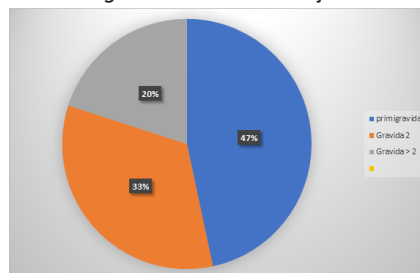
A detailed history was taken including previous obstetric history. A proforma was filled in every case. The age, gravida status, gestational age, menstrual history, past, family and personal history were all recorded.

General physical examination was done in every case. Obstetric examination included per abdominal, per speculum and per vaginal examinations. Routine investigations were carried out. Ultrasound was done in every case and details of viability, gestational age, presentation, placenta, amniotic fluid index, effective fetal weight, and any gross congenital anomaly were recorded.

Management protocol was decided considering chief complaints of patient, maternal, fetal condition. All neonates were assessed by pediatrician, examined carefully and any congenital anomaly if present were noted.

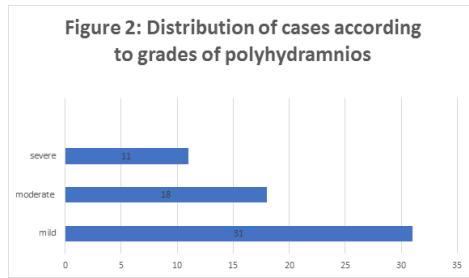
**RESULTS:**

Total 60 cases of polyhydramnios are taken to our study. Out of 60 cases primigravida constitutes majority 60% compared to Gravida 2 and higher order individually.



**Figure 1: Distribution of cases according Gravida**

It was observed that 31[51.6%] of our cases had mild polyhydramnios, 18[30%] had moderate and 11[18.3%] subjects had severe polyhydramnios.



Maternal complications associated with polyhydramnios are like preeclampsia, anaemia, gestational diabetes mellitus, Rh incompatibility and hypothyroidism along with numbers and percentages presented in table -1.

Complications which occur in mother as a result of polyhydramnios are presented in Table-2.

Fetal outcome in the form of alive neonates, stillborn babies and intrauterine deaths is presented in table -3.

Fetal congenital anomalies occurred in 34% cases in the form of anencephaly, hydrocephaly, cleft lip and palate, congenital heart disease, esophageal and duodenal atresia, diaphragmatic hernia and meningomyelocele in descending order and presented in table -4.

**Table- 1: Maternal conditions associated with Polyhydramnios.**

Maternal condition	Polyhydramnios patients	Percentage
Preeclampsia	11	18.3%
Anaemia	9	15%
Gestational Diabetes mellitus	6	10%
Rh incompatibility	5	8.3%
Hypothyroidism	3	5%
No condition associated	26	43.3%

**Table -2: Maternal complications during delivery.**

Maternal complications	Polyhydramnios	Percentage
Preterm labor	5	8.3%
Malpresentation	4	6.6%
PROM	3	5%
Eclampsia	3	5%
Postpartum haemorrhage	3	5%
Placenta previa	2	3.3%
Placental abruption	1	1.6%
Cord prolapse	1	1.6%
No complication	38	63.3%

**Table -3: Fetal outcome in cases of polyhydramnios.**

Fetal outcome	Polyhydramnios	Percentage
Alive	49	81.6%
Still births	5	8.3%
IUD	6	10%

**Table -4: Fetal congenital anomalies associated with Polyhydramnios.**

Fetal congenital Anomaly	Polyhydramnios	Percentage
Anencephaly	5	8.3%
Cleft lip& palate	4	6.6%
Hydrocephaly	3	5%
Congenital heart disease	3	5%
Esophageal atresia	2	3.3%
Duodenal atresia	2	3.3%
Meningomyelocele	1	1.6%
No anomaly	40	66%

**DISCUSSION:**

The amniotic fluid serves as a medium for growth, motion and development of fetus, protecting the fetus from jerks and serving as a cushion. Polyhydramnios is an uncommon complication associated with pregnancy. Such pregnancies are high risk and need to be thoroughly investigated. Idiopathic cases with mild to moderate degrees are associated with good outcome.

In present study most of the polyhydramnios cases seen in primigravida individually than gravida 2 and higher order gravidas. Mild degree polyhydramnios [AFI- 25 to 29.9 cm; DP- 8 to 9.9cm] constitutes 31 out of 60 where moderate [30-34.9cms;10 to 11.9cm] and severe polyhydramnios [ $\geq 35$ cms;  $\geq 12$ cms] constitutes 18 and 11 respectively.

In our study the incidence of polyhydramnios is 1.5%, which is comparable to various studies. In present study the perinatal outcome with congenital abnormality is 34% and normal is 66%. In present study total number of polyhydramnios cases were 60, anencephaly was noted in 5, cleft lip and palate in 4, hydrocephaly and congenital heart disease in 3, esophageal and duodenal atresia in 2. Anisa Fawad conducted a study where total number of cases of polyhydramnios was 70 and found congenital abnormality as anencephaly in maximum number of cases, duodenal atresia, esophageal atresia and gastroschisis 2 each.

In present study the probable aetiological factor was idiopathic in 43.3%, fetal congenital abnormality in 34%. The exact aetiology of polyhydramnios is not known but the probable aetiological factors are fetal congenital anomalies, multiple pregnancy, placental abnormality, maternal diabetes and idiopathic. Sometimes uncontrolled diabetes in first trimester leads to congenital anomaly in the fetus which causes polyhydramnios in mothers, so ultrasound examination at 18-22 weeks is mandatory to exclude major congenital abnormalities and structural defects at this stage.

Regarding the complications during pregnancy and delivery, Preterm labor was most common[8.3%] followed by malpresentation[6.6%] and PROM[5%] cases. Postpartum haemorrhage and eclampsia in 5% cases.

The fetal outcome of our study compared to that of Rajgiri et al where 5% intrauterine deaths and stillbirths were seen, where as we observed 8.3% stillbirths and 10% intrauterine deaths noted.

**CONCLUSION:**

Development of excessive amniotic fluid in course of pregnancy signals danger to the fetus, Timely diagnosis of the condition by meticulous clinical examination and ultrasound, early referral for better workup and determination if needed and good labor management at any gestation can reduce significant morbidity and mortality from this condition. Because of the congenital anomalies and adverse fetal outcome informs of stillbirths and IUD results in psychological and physical trauma to parents can be avoided by early detection and appropriate intervention.

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