

To Find Out the Incidence of Congenital Malformation in Pregnancies with Polyhydramnios: A Hospital Based Observational Study

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Abstract

Background: Polyhydramnios is the term for abnormal increase in the amniotic fluid. The aim of this study to find out the incidence of congenital malformation in pregnancies with polyhydramnios. **Subjects and Methods:** This analytical study was conducted on 100 unselected pregnancies attending the antenatal clinic in Department of Obstetrics and Gynecology department of government Medical College and Bangur Hospital Pali, Rajasthan. Pregnancy outcome were recorded for the patients who were classified as having an excess amount of amniotic fluid. Those cases with gross congenital anomalies incompatible with life were advised termination of pregnancy after explaining the risk of procedure. Labor was induced by various methods. The fetal outcome was recorded. **Results:** In our study there were several confounding factors affecting the occurrence of polyhydramnios. Out of 100 cases 22 (22%) were placental abruption, body weight gain of >20 kg were present in 30 cases (30%). 28 cases (28%) were not associated with any confounding factors. Out of which 21% cases were of preterm labor, 6% were of acute abdominal pain, 7% were of PROM, 4% were of IUFD, 4% were of cord prolapsed, 5% were of PPH, 53% cases were not associated with any maternal complications. **Conclusion:** We concluded that amniotic fluid index is the guiding tool for early diagnosis of congenital anomalies and early obstetrics intervention. This further helps in reducing the rate of maternal complications of polyhydramnios.

Keywords: Polyhydromanios, Foetal Outcome, Maternal Outcome, Amniotic Fluid.

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Received: July 2019

Accepted: July 2019

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. This fluid serves as a cushion for the growing fetus, but also serves to facilitate the exchange of nutrients, water, and biochemical products between mother and fetus.

Amniotic fluid, also known as Camerons fluid is present from the formation of the gestational sac. Amniotic fluid is present in the amniotic sac. It is generated from maternal plasma, and passes through the fetal membranes by osmotic and hydrostatic forces. When fetal kidneys begin to function i.e. about in 16 weeks, fetal urine also contributes to the fluid.^[1]

Polyhydramnios is the term for abnormal increase in the amniotic fluid. It is defined as “the deepest vertical pocket of greater than 8cms or an amniotic fluid index above 95th percentile for gestational age”.^[2] The frequency of fetal anomalies associated with polyhdramnios ranges from 31.3% to 38%.

With the use of routinely performed ultrasound during

pregnancy, several methods have been used to describe the amount of amniotic fluid. It has been shown that AFI is quite reliable in determining normal or elevated volumes. Nevertheless, standardised objectives indices provide accurate reproducibility and are indispensable for the monitoring of ongoing pregnancy at risk.^[3]

With better facilities for detailed investigation of mother and fetus, more causative factors can be identified and this helps in the counseling of parents regarding etiology of polyhydramnios, fetal prognosis, recurrence risk and different management options for the baby if it needs medical & surgical care after birth.^[4]

Subjects and Methods

This analytical study was conducted on 100 unselected pregnancies attending the antenatal clinic in Department of Obstetrics and Gynecology department of government Medical College and Bangur Hospital Pali, Rajasthan.

Inclusion Criteria

- All pregnant patients with gestational age from 16

weeks and onwards.

- Patients having previous history of polyhydramnios/fetal congenital malformations.
- Singleton Pregnancy.

Exclusion criteria

- Patients having family history of congenital anomalies
- Patients having history of
- Diabetes mellitus
- Hypertension
- Pre eclampsia
- Eclampsia
- Multiple pregnancy
- Hypo/hyperthyroidism.

All patients attending ANC were asked to participate at the time of booking (between 16 to 20 weeks gestation) and were subjected to USG to rule out congenital anomalies. It is necessary to carried out atleast three ultrasound scan during a normal pregnancy. The one carried out in the first trimester is diagnostic for dating the pregnancy while the purpose of the one in 3rd trimester is useful for establishing a prognosis for vaginal delivery. Between these two the second trimester ultrasound scan is used to look form fetal malformation. However it has not always proved easy to detect fetal malformation, good no. of these has remained unseen in spite of repeated ultrasound scan. Ultrasound scan remain the only effective examination for prenatal screening of severe fetal malformations or minor fetal abnormalities.

The study population consisted of pregnant women attending the hospital in the above mentioned period, as a suspected cases of polyhydramnios, confirmation of diagnosis was always taken by the consultant obstetrician and Sonologist. Most of the cases of polyhydramnios were admitted in the hospital till they delivered, other patients were followed up as outpatient and they were admitted to the hospital for delivery.

Polyhydramnios was diagnosed when the AFI was more than 95th percentile for the gestational age. In addition, standard fetal biometric data were obtained. The fetal lie, presentation, position, assessment of gestational age and placental site were determined. A systematic fetal organ review is than performed in an attempt to detect any gross congenital abnormalities. Other necessary investigations were also carried out. Possible confounding factors that could affect the occurrence of polyhydramnios were analyzed. We than investigated the relative risks of these events to adverse perinatal outcome by adjusting the variants. All these patients had been followed up during their stay in the hospital until their discharge, by regular monitoring of fetal well being.

Pregnancy outcome were recorded for the patients who were classified as having an excess amount of amniotic fluid. Those cases with gross congenital anomalies incompatible with life were advised termination of pregnancy after explaining the risk of procedure. Labor was induced by various methods. The fetal outcome was recorded.

Results

In our study also, out of 100 patients, 56 (56%) were in the age group of 21-25 yrs, 19 (19.0%) were in the age group of <20 yrs, 25 (25.0%) were above the age of 25 yrs [Table 1]. Out of 100 cases, 68.0% (68) fetuses were alive at birth, 21.0% (21) were still birth and 11.0% (11) were IUD [Table 2].

In our study there were several confounding factors affecting the occurrence of polyhydramnios. Out of 100 cases 22 (22%) were placental abruption, 9 (9%) were of past history of fetal death, 11 (11%) were of past history of preterm delivery, body weight gain of >20 kg were present in 30 cases (30%). 28 cases (28%) were not associated with any confounding factors [Table 3].

In our study there were various maternal complications, out of which 21% cases were of preterm labor, 6% were of acute abdominal pain, 7% were of PROM, 4% were of IUFD, 4% were of cord prolapsed, 5% were of PPH, 53% cases were not associated with any maternal complications [Table 4].

Table 1: Severity of Polyhydramnios according to Age

Age (Yrs)	Severity of Polyhydramnios			Total (%)
	Mild	Moderate	Severe	
<20 yrs	12	5	2	19 (19.0%)
21-25yrs	35	12	9	56 (56.0%)
>25 yrs	14	6	5	25 (25.0%)

Table 2: Fetal Outcome Associated with Severity of Polyhydramnios

Fetal Outcome	Severity of Polyhydramnios			Total (%)
	Mild	Moderate	Severe	
Live Birth	43	19	6	68 (68.0%)
Still Birth	2	14	5	21 (21.0%)
IUD	1	5	5	11 (11.0%)

Table 3: Significant confounding factors affecting the occurrence of polyhydramnios

Confounding factors	Polyhydramnios No. of cases	%
Placental abruption	22	22%
Past history of fetal death	9	9%
Past history of pretermdelivery	11	11%
Maternal Body weight gain of > 20 kg	30	30%
No associated factors	28	28%
TOTAL	100	100%

Table 4: Percentage distribution according to the maternal complications

Complications	Frequency	Percentage
Preterm labor	21	21%
Acute abdominal pain	6	6%
PROM	7	7%
IUFD	4	4%
Cord prolapse	4	4%
PPH	5	5%
No associated complication	53	53%
TOTAL	100	100%

Discussion

In our study most of the fetal congenital anomalies (58%)

were detected by antenatal ultrasound while 42 % Of the anomalies were not detected on antenatal ultrasound. According to Lawrence et al^[5] 2-3% of the neonates are born with an abnormality that would have been detected ultrasonographically. Dasheet al^[6] found that 11.7% of the malformations were detected on prenatal ultrasound.

In our study also, out Of 100 patients, 56 (56%) were in the age group of 21-25 yrs, 19 (19.0%) were in the age group of <20 yrs, 25 (25.0%) were above the age of 25 yrs. Study conducted by Ron Belosky et al.^[7] reported the highest number of patient of polyhydramnios, 50 (47%) were in the age group of 21-25 years which is similar to our study.

Studies conducted by Humaira and colleagues (2006)^[8] is contradictory to our study. 51% cases were reported in between the age group of 30-39 yrs and 10% were in the age group of >40yrs. AnisaFawad(2008)^[9] in the colleagues reported higher incidence in the age group between 26-30 yrs. Saadia and colleagues (2010)^[10] reported 30% in 20-29 yr, 53% in 30-39 yr and 5% in >40%.

In our study majority of cases 68% had live birth and 32% were dead (still birth and IUD). Our study is similar to the study conducted by Dr. Saadia Tariq on polyhydramnios: study of causes and fetal outcome. Regarding fetal outcome 68.2% babies delivered alive, still birth 24.3%, and early neonatal deaths seen in 6 babies which is mainly caused by prematurity.

In our study most common maternal complication was preterm labour 25%. Another maternal complications were PPROM (7%), PPH (5%), cord prolapse (4%), acute abdominal pain (6%), IUFD (4%). Ariel Many et al.study to show the association between polyhrdamnios and preterm delivery . In a study by Many et al.^[11] (1995) studied to find out the association of polyhydramnios with preterm delivery. Among 275 singleton pregnancies with polyhydramnios, the incidence of preterm delivery was 18.5%, but no significant difference was seen in rate of preterm delivery with increasing severity of polyhydramnios. The rate of prematurity for those pregnancies with idiopathic hydramnios (12.6%) was shown to be similar to the control population in the study.AnishaFawad, Brian and colleagues^[9] also reported higher incidence of PROM in patients of polyhydramnios. Brian and Hubbard, Ron Bolesky (2008)^[8] also reported

higher incidence of PPH in the patients of polyhydramnios.

Conclusion

We concluded that amniotic fluid index is the guiding tool for early diagnosis of congenital anomalies and early obstetrics intervention.This further helps in reducing the rate of maternal complications of polyhydramnios.

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How to cite this article: Bishnoi S, Bishnoi RK, Bhati BS. To Find Out the Incidence of Congenital Malformation in Pregnancies with Polyhydramnios: A Hospital Based Observational Study. Asian J. Med. Res. 2019;8(3):OG07-OG09. DOI: dx.doi.org/10.21276/ajmr.2019.8.3.OG03.

Source of Support: Nil, **Conflict of Interest:** None declared.