

A Prospective Study to Find Out the Perinatal and Maternal Outcome in Patients with Polyhydramnios: A Institutional Based Study

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ABSTRACT

Background: Polyhydramnios is the term for abnormal increase in the amniotic fluid. 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. The aim of this study to find out the perinatal and maternal outcome in patients with polyhydramnios.

Material & Methods: This is a prospective study done on 100 unselected pregnancies attending the antenatal clinic in Department of Obstetrics and Gynecology department of RNT Medical College Udaipur. 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. We then investigated the relative risks of these events to adverse perinatal outcome by adjusting the variants.

Results: In our study, there were 30% preterm deliveries, 4% cases have small for gestational age babies, 5% had large for gestational age babies, 10% had meconium for which they had emergency caesarean section, 16% cases were admitted in NICU, for respiratory distress syndrome and prematurity. 45%

of the patient had anemia, 12% were Rh negative while 43% had no associated abnormality. There were many perinatal complications. Out of them preterm birth was the most common complication.

Conclusion: We concluded that PPROM, Preterm labor and PPH were the major maternal complications during pregnancy. Polyhydramnios is associated with high perinatal mortality rate.


Keywords: Amniotic Fluid, Polyhydramnios, Gestational Age, Perinatal Complication, Maternal Complication.

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INTRODUCTION

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.

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. Contrary to popular belief, amniotic fluid has not been conclusively shown to be inhaled and exhaled by the fetus. In fact, studies from the 1970s show that in a healthy fetus, there is no inward flow of amniotic fluid into the airway.¹ Instead, lung development occurs as a result of the production of fetal lung fluid which expands the lungs. It also prevents the fetus from mechanical jerks and shocks.

Too little amniotic fluid (oligohydramnios) can be a cause or an indicator of problems for the mother and baby. The majority of pregnancies proceed normally and the baby is born healthy, but this isn't always the case. Babies with too little amniotic fluid can develop contractures of the limbs, clubbing of the feet and hands, and also develop a life-threatening condition called hypoplastic lungs. On every prenatal visit, the obstetrician/gynaecologist or midwife should measure the patient's fundal height with a tape measure. It is important that the fundal height be measured and properly recorded to track proper fetal growth and the increasing development of amniotic fluid.

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

In older studies the incidence of polyhydramnios was 3.5%, but recent studies give an incidence of 0.2% due to earlier diagnosis and better management of pregnancies with fetal congenital malformation or anomalies.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 The aim of this study to find out the perinatal and maternal outcome in patients with polyhydramnios.

MATERIALS & METHODS

This is a prospective study done on 100 unselected pregnancies attending the antenatal clinic in Department of Obstetrics and Gynecology department of RNT Medical College Udaipur. 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 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. Other necessary investigations were also carried out. We then 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.

Inclusion Criteria

- All pregnant patient 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 and hypo/hyperthyroidism.

RESULTS

In our study, there were 30% preterm deliveries, 4% cases have small for gestational age babies, 5% had large for gestational age babies, 10% had meconium for which they had emergency caesarean section, 16% cases were admitted in NICU, for respiratory distress syndrome and prematurity (Table 1). 45% of the patient had anemia, 12% were Rh negative while 43% had no associated abnormality (table 2). In our study there were various maternal complications, out of which 22% 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, 52% cases were not associated with any maternal complications (table 3). There were many perinatal complications. Out of them preterm birth was the most common complication (table 4).

Table 1: Association of polyhydramnios with adverse pregnancy outcome

Pregnancy outcome	Polyhydramnios	%
Preterm delivery <37 weeks	30	30%
Small for gestational age	4	4%
Large for gestational age	5	5%
Meconium	10	10.0%
NICU Admission	16	16.0%

Table 2: Distribution of patients according to maternal condition

Condition	Polyhydramnios	%
Anemia	45	45%
Rh negative	12	12%
No associated condition	43	43%
TOTAL	100	100%

Table 3: Percentage distribution according to the maternal complications

Complications	Frequency	%
Preterm labor	22	22%
Acute abdominal pain	6	6%
PROM	7	7%
IUFD	4	4%
Cord prolapsed	4	4%
PPH	5	5%
No associated complication	52	52%
TOTAL	100	100%

Table 4: Distribution of cases according to the perinatal outcome

Fetal complications	No. of cases	%
Respiratory distress syndrome	16	16%
Preterm birth	33	33%
Hypothermia	8	8.3%
Jaundice	6	6.6%
Sepsis	3	3.3%
Shoulder dystocia	2	1.33%
Difficult breech delivery complications	2	2.3%
No associated complication	30	30%
TOTAL	100	100%

DISCUSSION

In our study 45 patients (45%) were associated with anemia. This observation can be explained by the high prevalence of anemia in our country. In the study conducted by Sudha Chourasia et al.⁵ anemia was associated with 17.9% of polyhydramnios. Methew et al (2008)⁶ also reported higher incidence of anemia in polyhydramnios.

In our study most common fetal complication was preterm delivery (33%). Magnann et al. (2010)⁷ studied to show the relation between the severity of polyhydramnios and preterm delivery. Unlike some studies that showed no correlation between the severity of polyhydramnios and prematurity, our study has shown that the rate of preterm delivery at <37 weeks increases as the maximal AFI increases, and incidence reaches to 19.4% with an

AFI >35cm. Brian et al. (2008)⁸ also reported higher incidence i.e. 26% preterm labour and delivery which is again supportive to this study.

In the study conducted by Kuang Chao Chen et al.⁹ there were increased risk of preterm delivery, low birth weight, very low birth weight, low one and five minute Apgar score, fetal death, LGA babies, meconium stained amniotic fluid, NICU admission which is similar to our study.

In our study there were various maternal complications, out of which 22% 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, 52% cases were not associated with any maternal complications. Dafallah and colleagues¹⁰ also reported higher incidence of preterm delivery in patients of polyhydramnios. 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. Anisha Fawad, Brian and colleagues¹² 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 PPRM, Preterm labor and PPH were the major maternal complications during pregnancy. Polyhydramnios is associated with high perinatal mortality rate.

REFERENCES

1. Lily A.W. Disorder of Amniotic Fluid. ASSALI, N.S. Pathophysiology of Gestation Volume II. Academic Press, New York & London. 1972.
2. Moor TR Cayle JE. The amniotic fluid index in normal human pregnancy. *Am j Obstet Gynaecol*1990;162: 1168-73.
3. Middleton WD, Kurtz AB, Hertzberg BS. Ultrasound –the requisites. 2nd ed Missouri: Mosby; 2004; 3-376.
4. Magann EF, Doherty DA, Chauhan SP, et al. How well do the amniotic index and single deepest indices (below the 3rd and 5th and above 95th and 97th percentiles) predict oligohydramnios and hydramnios? *Am J Obstet Gynaecol*204;190:164-9.

5. Sudha Chourasia, Juhi Agarwal, Mahendra Badole. Clinical Study To Evaluate The Maternal And Perinatal Outcome Of Pregnancies With Polyhydramnios. *Journal of Evolution of Medical and Dental Sciences* 2013; 2(41), October 14: 7972-77.

6. Mathew M, S aquib S, Rizvi SG: Polyhydramnios. Risk factors & outcome. *Saudi Med J.* 2008 Feb 29(2); 256-60.

7. Magann EF, Doherty DA, Lutgendorf MA, Magann MI, Chauhan SP, Morrison JC. Peripartum outcomes of high risk pregnancies complicated by oligo and polyhydramnios :a prospective longitudinal study. *J Obstet Gynecol Res* 2010;32:268-77.

8. Brain et.al. Pediatric Polyhydramnios and Oligohydramnios updated. Feb14, 2008, 1-3.

9. Kuang-Chao Chen, Jui-Der Liou, Tai-Ho Hung, Dong-Ming Kuo, Jenn-Jeih Hsu, Ching-Chang Hsieh, T'sang-T'ang Hsieh, Perinatal Outcomes of Polyhydramnios without Associated Congenital Fetal Anomalies after the Gestational Age of 20 weeks. *Chang Gung Med J* 2005;28:222-8.

10. Dafallah SE, Babikir HE: Risk factors predisposing to abruption. Placentae. Maternal and fetal outcome. *Saudi Med J.* 2004 Sept; 25(9): 1237-40.

11. Ariel Many, Hill LM, Lazebink and Martin (1995). The association between polyhydramnios and preterm delivery; *Obstet Gynecol* 86:389-91.

12. Anisha Fawad, Shamshad and Nargis Danish: Frequency, causes and outcome of polyhydramnios *Journal of Medical Sciences* July – December 2008;6(2): 106-9.

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