

Clinical Study to Evaluate the Association of Polyhydramnios with Fetal Congenital Malformations

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ABSTRACT

Background: To find out the association of polyhydramnios with fetal congenital malformation.

Materials & Methods: A hospital based prospective study for duration from 1st Dec 2015 to 30th Nov 2016. All the patients identified as having polyhydramnios according to Amniotic Fluid Index. Cases having polyhydramnios but associated conditions like diabetes mellitus, hypertension, hypothyroidism, pre-eclampsia, eclampsia, and multiple pregnancies were excluded.

Results: Incidence of association of congenital anomalies with polyhydramnios was found to be 58%. Majority of cases were unbooked [70%]. 62% were from rural background and belong to low socioeconomic status. Increased incidence of operative delivery was seen in the study. Associated maternal factors found with polyhydramnios were anaemia [45%], Rh Negative factors [12%], respiratory distress [10%], malpresentations [26%], PROM [7%], acute abdominal Pain [6%] and preterm labour [21%]. Fetal complications include prematurity [30%], IUFD [4%], congenital malformation [50%], cord prolapsed [4%], respiratory distress syndrome [16%], hypothermia [8.3%]. Most common fetal congenital anomaly was anencephaly.

Conclusion: Our study demonstrates that careful fetal examination has to be performed when polyhydramnios is diagnosed, as congenital anomalies are often associated with this condition. These anomalies if detected early, timely termination of pregnancy can be done hence less physical and psychological trauma to the mother. Also antenatal visits role in early diagnosis of high risk pregnancy like polyhydramnios.

Key Words: Polyhydramnios, Fetal, Congenital, Pregnancy, Amniotic Fluid.

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INTRODUCTION

Amniotic fluid or liquor amnii is the protective fluid contained by the amniotic sac during pregnancy. In early pregnancy it is formed from ultrafiltration of maternal plasma. After 20 weeks it is mainly composed of fetal urine. Amniotic fluid provides useful information about the well-being and maturity of fetus.¹ It creates physical spaces for fetal movements, permits fetal swallowing for GIT development, guards against trauma has bacteriostatic properties maintain temperature and also has minimal nutritive properties.² Keeping in mind the significance of AFI, both excessive & less amount of liquor affects fetal well-being we are concentrating on the form or aspect ie polyhydramnios.

Polyhydramnios clinically defined as the excessive accumulation of liquor amnii causing discomfort to the patient. The deepest vertical pocket of greater than 8 cm or more and amniotic fluid index above 95th percentile of gestational age is defined as polyhydramnios.³ The incidence of polyhydramnios varies from 14.5% to 44.5% with the use of routinely performed ultrasound

during pregnancy.^{4,6} Several methods have been used to describe the amount of amniotic fluid. Amniotic fluid volume assessment done by USG is relatively accurate than other method of assessment. The technique of four quadrant method of calculating amniotic fluid Index most reliable.

AIMS AND OBJECTIVES

1. To study the associated of fetal congenital anomalies with polyhydramnios.
2. To study the perinatal outcome.
3. To study the maternal outcome.

MATERIALS AND METHODS

An analytical study to evaluate the maternal and fetal outcome of pregnancies with polyhydramnios and association of polyhydramnios with fetal congenital malformations was conducted in the department of Obstetrics and Gynaecology in

Rajkiya Mahila Chikitsalya, J.L.N. Medical College Ajmer from 1st Dec 2015 to 30th Nov 2016. A review of polyhydramnios cases presenting to the department were included in the study. All cases

were assessed both clinically and by USG. Patient having diabetes Mellitus, Hypo- Hyperthyroidism eclampsia / preeclampsia, twin pregnancy were not included in the study.

Table 1: Shows various congenital associated with polyhydramnios. Majority of congenital anomalies were of CNS.

Congenital anomalies	Security of polyhydramnios			Total (%)
	Mild	Moderate	Severe	
Anencephaly	6	10	5	21(7%)
Anencephaly + spina Bifida	3	7	5	15(5.6%)
Meningomyelocele	4	6	7	17(6%)
Meningocele + spina Bifida	6	5	5	16(5.3%)
Occiplo encephalocele	5	4	3	12(4%)
Hydrocephalous	3	6	3	12(4%)
Hydrops fetalis	4	7	5	16(5.3%)
Cleft lip & cleft palate	5	3	2	10(3.3%)
Oesophageal atresia	5	7	4	16(5.3%)
Gastroschisis	2	1	2	5(1.67%)
Omphalocele	3	3	4	10(3.3%)
Cardiac septal defect	1	3	2	6(2%)
Club foot	3	2	1	6(2%)
Diaphragmatic Hernia	3	2	3	8(2.6%)
Dilated pelvicalyceal system	1	1	2	4(1.3%)

Table 2: Shows maternal complications found with polyhydramnios.

Maternal complications	Frequency	Percentage
Abruptio placenta	66	22%
Preterm labour	65	21.6%
PROM	21	7%
Acute abdominal pains	18	6%
PPH	15	5%

Table 3: Showed various fetal complications associated with polyhydramnios.

Fetal complications	Frequency	Percentage
Preterm Birth	90	30%
Respiratory distress syndrome	48	16%
Hypothermia	25	8.3%
Jaundice	20	6.6%
Sepsis	10	3.3%
Shoulder dystocia	4	1.33%
Difficult breech delivery related complication	7	2.3%

OBSERVATIONS

The ultrasound study of polyhydramnios with perinatal and maternal outcome was conducted on 300 cases to ascertain various etiological factors, maternal complication & fetal outcome. 58% of patients presenting with polyhydramnios found to have congenital anomalies.

Anencephaly is the most common congenital anomaly among was accounts for 12% of the total followed by meningomyelocele (11%), followed by hydrops fetalis 18 (6%), hydrocephalous 5%, occipital encephalocele 4%, GIT anomalies 5.3%, other multisystem anomalies were cleft lip and cleft palate (3.3%), cardiac septal defect 6 (2%), diaphragmatic hernia 8 (2.6%), club foot (2%), dilated Pelvicalyceal system 6 (2%).

Maximum complication found was abruption placenta 66 (22%), followed by preterm labour 65 (21.6%), PROM (7%), acute abdominal pain (6%), and PPH is (5%).

Most common complication was preterm birth 90 (30%), followed by RDS 48 (16%), Hypothermia 25 (8.3%), jaundice 20 (6.6%), sepsis 10 (3.3%), shoulder dystocia 4 (1.3%), and difficult breech delivery 7 (2.3%). Among the maternal complication associated with post-partum urinary tract infection 2% was the most common followed by post-partum fever 40 (13.3%), sub involution of uterus 27 (9%), PROM 21 (7%), oliguria 3 (1%), Chorioamnionitis 3 (1%), post-partum sepsis 1 (0.33%). Most of the cases 73% were delivered vaginally out of which 15% cases were induced due to various reasons like IUGR, anencephaly Rh isoimmunisation 8.58% were delivery spontaneously 27% cases have gone LSCS out of which 16% were emergency LSCS due to cold prolapse, previous LSCS with scar tenderness, fetal distress. 11% were elective LSCS due to Hydrocephalous, macrosomia, previous LSCS due to contracted pelvis.

Table 4: Shows various maternal complication post-partum.

Maternal complications	Frequency	Percentage
Urinary tract infection	60	20%
Post-partum fever	40	13.33%
Sub involution of uterus	27	9%
PROM	21	7%
Oliguria	3	1%
Chorioamnionitis	3	1%
Post-Partum sepsis	1	0.3%

Table 5: Showed the mode of delivery in patient with polyhydramnios.

Mode of delivery	No. of cases	%	Reason of induction
Vaginal Delivery (induced)	45	15%	IUFD Rh isoimmunisation Anencephaly
Vaginal Delivery (spontaneously)	174	58%	-
Emergency LSCS	48	16%	Cold prolapsed , Footing, Abruption, placenta, Fetal distress, Previous LSCS with scar tenderness
Elective LSCS	33	11%	Previous LSCS with contracted pelvis, Hydrocephalous, macrosomia
TOTAL	300	100%	

DISCUSSION

Incidence of congenital anomalies associated with polyhydramnios was 58% which is similar to the study conducted by Anisa Fawad (2008) et al⁷ 37%. In our study majority of the patients with polyhydramnios were in the age of 21-25 yrs (5.6%). Study conducted by Ron Balesky et al⁸ reported the incidence of polyhydramnios in the age group of 21-25 yrs (45%) which is similar to our study. Humaira and colleges (2006)⁹ also reported 51% cases between 30-39 yrs and 10% in age >40 yrs. Saadia & colleague (2010)¹⁰ reported 30% in 20-29 yrs, 53% in 30-39 yrs and 50% in >40 yrs. In our study maximum no. of cases (78%) were found in multigravida, out of which 15% were 2nd gravid and 62.3% were found in >2nd gravid. Only 25.3% were primigravida. Gudena et al¹¹ reported 58% were multigravida, 21% in grand multigravida. In our study incidence of emergency caesarean is 16% & 11% were elective LSCS. Ariel Many et al (1995)¹² reported similar study incidence 19% in emergency LSCS, 11% were of elective cases. Preterm birth (30%) was the most common in women with polyhydramnios. Brian et al (2008)¹³ also reported 26% preterm delivery. In our study common anomaly was neural tube defect, anencephaly being the most common of NTDs followed by hydops fetalis (51%), hydrocephalous (4%), GIT abnormalities 5.3%, diaphragmatic hernia 2%, dilated pelvicalectyecal system 2% In our study 21% were still born & 11% were IUD. Humaira et al⁹ reported similar outcome i.e 18% IUD. In our study various maternal complications were associated with polyhydramnios Abruption placentae (22%) was the most common complication followed by preterm labour 21.6% PROM 21 (7%), Acute abdominal Pain 18 (6%), PPH 15 (5%). Our study is similar to the study conducted by Gudena Samyukta.

CONCLUSION

Pregnancy complicated by polyhydramnios is high and need to be thoroughly investigated Incidence was high among patient in rural area. Perinatal morbidity and mortality are significantly increased when polyhydramnios in present at labour. Conditions associated

with polyhydramnios are abruption placenta, Preterm labour, PROM, malpresentation, PPH. Neural tube defects and other serious structural anomalies are easily detectable by ultrasound, Amniotic fluid volume is easily identified by current diagnostic ultrasound. If early diagnosis aided by good antenatal care, timely referral to higher centres use of sophisticated technology like USG are made than maternal morbidity & perinatal mortality can be reduced by offering termination of pregnancy at an earlier gestation in cases of congenital anomalies & labor management in these high risk cases of polyhydramnios. The study given us the understanding of the impact of polyhydramnios on the mother & fetus which can be effectively managed if earlier detection & follow ups are carried out.

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