PERINATAL OUTCOMES AMONG PREGNANT WOMEN HAVING IDIOPATHIC POLYHYDRAMNIOS

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ABSTRACT

Background: Polyhydroamnios is one of the common presentation in pregnancy.
Objective: To determine the frequency of perinatal outcomes in women with idiopathic polyhydramnios.
Methodology: This cross sectional study was carried out from 20th October 2016 to 20th April 2017 at Department of Obstetrics & Gynecology, Shaikh Zayed Hospital, Rahim Yar Khan. A total of 241 study subjects having polyhydramnios were included with singleton pregnancy. The final outcome in this study was perinatal outcomes in terms of preterm delivery, low Apgar score, low birth weight and fetal distress. Data was analyzed by using SPSS 20.
Results: Age range in this study was from 18 to 35 years with mean age of 26.5±2.9 years, mean parity 1.4±0.74, mean gestational age 37.7±1.2 weeks, mean BMI 26.8±2.27 Kg/m^2 and mean AFI was 28.3±1.9 centimeters. Majority of the patients were from 18-28 years (78.4%). Preterm delivery was seen in 14.5% patients. Low Apgar Score was seen in 19.9% patients. Low Birth Weight was seen in 10.4% patients. Fetal Distress was seen in 8.3% patients.
Conclusion: Idiopathic polyhydramnios be considered a high risk pregnancy, which results in preterm delivery, low Apgar score, low birth weight and fetal distress. It should be managed in tertiary care settings with a detailed anti-partum fetal well-being surveillance including intrapartum fetal monitoring. Consultant neonatologist should attend delivery.

Key words: Idiopathic Polyhydraminos, Perinatal outcomes, Fetal distress, Low birth weight.

INTRODUCTION

Amniotic fluid is defined as the fluid that surrounds the baby in uterus.[1] It gives the fetus, an environment necessary for growth and development.[2] A number of maternal and fetal systems interact with each other and as a result amniotic fluid balance is formed. The ultimate volume of amniotic fluid is found by the combination of fluid flow into and out. Fluid balance is maintained by fetal fluid production (i.e. lung liquid and urine) and resorption (i.e. swallowing, and membranous absorption) especially during late gestation.[3,4] Amniotic fluid imbalance may cause various disorders and malformations, which results in perinatal outcome.[2]

The poor polyhydramnios includes an Amniotic Fluid Index (AFI) of 25 cm or greater or a single deepest pocket (SDP) of greater than 8 cm.[3] Polyhydramnios has three levels groups: mild (amniotic fluid index 25-30 cm or SDP of 8 – 11 cm), moderate (AFI 31 – 35cm) and severe polyhydramnios (AFI>35cm).[5,6] The incidence of polyhydramnios ranges from 0.2% to 3.9%.[4] Some maternal disorders such as diabetes, infections, drugs, placental abnormalities, and fetal abnormalities, Rh iso-immunization, and multiple gestations, generally related to polyhydramnios.[5] Congenital abnormalities can also lead polyhydramnios like to intestinal atresia of fetus ledding to gastro-intestinal obstruction, resulting with polyhydramnios.[6] However, in most of cases, no cause is found and it is referred to as idiopathic or isolated. Polyhydramnios can request in many complications preterm delivery and caesarean section, intrauterine and neonatal death.[7,8,9] Literature shows preterm delivery low Apgar score and fetal distress in women with idiopathic polyhydraminos,[7,8] and proper monitoring and management of such condition in mandatory.[7,8]

There is a paucity of information about this issue in our population. Moreover, results of international studies cannot be generalized on our general population. So there was a great need to get further evidence on this topic in our population to get the right picture of the perinatal outcomes in women with polyhydraminos so that future investigation could be planned. So this study was done to determine the frequency of perinatal outcomes in women with idiopathic polyhydraminos.

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METHODOLOGY

This cross sectional study was conducted from 20th October 2016 to 20th April 2017 on pregnant women with singleton pregnancy admitted in labour ward Department of Obstetrics & Gynecology, Shaikh Zayed Hospital, Rahim Yar Khan, selected by using non probability consecutive sampling technique. A proforma was specifically designed to record findings of this study and 241 pregnant women admitted in Labour Ward, meeting the inclusion criteria were enrolled for the study. Patients were included in the study after taking informed consent. Baseline demographic information of patients (age, parity, height, weight, BMI, amniotic fluid index) was taken. All women were observed during the onset of spontaneous labour, induction of labour or planned caesarean section performed according to advice of consultant gynecologist. All the procedures (induction of labour, Cesarean section) were done under the supervision of consultant gynecologist having 2 years post fellowship experience.

Data was noted for perinatal outcomes such as preterm delivery, low Apgar score, low birth weight and fetal distress as per operational definition on especially designed proforma.

Frequencies and percentages were computed for qualitative variables like preterm delivery, low Apgar score, low birth weight and fetal distress. Mean±SD was presented for quantitative variables like age, parity, gestational age, amniotic fluid index and BMI. Effect modifiers like age, parity, and BMI were controlled by stratification. Post stratification chi- square test was applied. P value of $0 \leq 0.05$ was considered statistically significant. SPSS version 20 was used for data analysis.

RESULTS

Mean age of patients was 26.5±2.9 years (ranging from 18 to 35 years), mean parity 1.4±0.7, mean gestational age 37.7±1.2 weeks, mean BMI 26.8±2.2 Kg/m^2 and mean AFI was 28.3±1.9 centimeters. Majority of the patients were from 18-28 years 189 (78.4%) and 52 (21.6%) from age group of 29 to 35 years. Preterm delivery was observed in 14.5% patients, Low Apgar Score in 19.9% patients, Low Birth Weight in 10.4%

patients and Fetal Distress in 8.3% patients as shown in Table I.

Table I: Perinatal Outcome in Patients with Idiopathic Polyhydramnios

Perinatal Outcome	No. of Patients	%age
Preterm Delivery	35	14.5%
Low Apgar Score	48	19.9%
Low Birth Weight	25	10.4%
Fetal Distress	20	8.3%
Normal delivery (no complications)	113	46.9%
Total	**241**	**100%**

Table II: Preterm Delivery versus age, parity, gestational age, BMI and AFI

Age (in years)	No. of Patients with Preterm Delivery	No. of Patients without Preterm Delivery	P.value
Age (years)			
18 - 28	29	160	
29 – 35	6	46	0.488
Total	35	206	
Parity			
1 - 2	3	186	
3 - 4	2	20	0.547
Total	35	206	
Gestational age (in weeks)			
36 - 39	35	147	
39 - 40	0	59	0.0002
Total	35	206	
BMI (in kg/m^2)			
Normal	7	39	
Overweight	6	46	0.900
Obese	3	23	
Total	35	206	
AFI (in cm)			
26 - 30	35	164	
> 30	0	42	0.003
Total	35	206	

Stratification of age, parity, gestational age, BMI and AFI with respect to preterm delivery and low Apgar score are shown in Table II and III. Stratification of age, parity, gestational age, BMI and AFI with respected to low birth weight and fetal stress is shown in table IV and V.

Table III: APGAR Score versus different variables

Variables	No. of Patients with low APGAR Score	No. of Patients without low APGAR Score	P.value
Age (years)			
18 - 28	36	153	
29 – 35	12	40	0.516
Total	48	193	
Parity			
1 - 2	43	176	
3 - 4	5	17	0.779
Total	48	193	
Gestational age (in weeks)			
36 - 39	34	148	
39 - 40	14	45	0.399
Total	48	193	
BMI (in kg/m^2)			
Normal	8	38	
Overweight	34	135	0.839
Obese	6	20	
Total	48	193	
AFI (in cm)			
26 - 30	33	166	
> 30	15	27	0.0047
Total	48	193	

Table IV: Low Birth Weight versus different variables

Variables	No. of Patients with low birth weight	No. of Patients without low birth weight	P.value
Age (years)			
18 - 28	17	172	
29 – 35	18	44	0.180
Total	25	216	
Parity			
1 - 2	22	197	
3 - 4	3	19	0.710
Total	25	216	
Gestational age (in weeks)			
36 - 39	20	162	
39 - 40	5	54	0.583
Total	25	216	
BMI (in kg/m^2)			
Normal	4	42	
Overweight	20	149	0.423
Obese	1	25	
Total	25	216	
AFI (in cm)			
26 - 30	24	175	
> 30	1	41	0.0090
Total	25	216	

Table V: Fetal Distress versus different variables

Variables	No. of Patients with Fetal Distress	No. of Patients without Fetal Distress	P.value
Age (years)			
18 - 28	14	175	
29 – 35	6	46	0.393
Total	20	221	
Parity			
1 - 2	16	203	
3 - 4	4	18	0.094
Total	20	221	
Gestational age (in weeks)			
36 - 39	16	166	
39 - 40	4	55	0.788
Total	25	221	
BMI (in kg/m^2)			
Normal	6	40	
Overweight	13	156	0.346
Obese	1	25	
Total	20	221	
AFI (in cm)			
26 - 30	0	199	
> 30	20	22	0.0001
Total	20	221	

DISCUSSION

An early recognition of polyhydramnios may lead to identification of pregnancies that may be at increased risk of adverse outcomes.[9-13] A thorough evaluation of patient is needed as polyhydramnios is associated with an may maternal and fetal complications.[14-16] Polyhydramnios is a disorder in pregnancies and sometimes observed as a result of several fetal disorders, however sometimes cause is not clear. Since exact etiology of idiopathic polyhydramnios is still not clear, many studies were done to clarify the mechanisms of the regulation of amniotic fluid and even to assess the molecular interactions.[9] There is still lack of universal guidelines for idiopathic polyhydramnios in obstetric practice.

In present study, preterm delivery was observed in 14.5% patients. Low Apgar Score was seen in 19.9% patients. Low Birth Weight was seen in 10.4% patients. Fetal Distress was seen in 8.3% patients. The results of this study, are comparable with a study where incidence of preterm delivery was detected 16.5% versus 14.5% in current study, Low Birth Weight 8.5% versus 10.4% in current study, and Fetal distress was 11.7% versus 8.3% in this study in women with idiopathic polyhydraminos,[7] however,

in another study incidence of preterm delivery was reported much less 8.7%, low Apgar score also very low 5.8% and Low Birth Weight by 7.2% in women which is similar with idiopathic polyhydraminos.[8]

A study compared the perinatal outcome of singleton pregnancies having idiopathic polyhydramnios with controls.[10] Low birth weight was 35.1% vs. 3.5% in cases and controls respectively. Low APGAR (<7) at 5 minute was 21.1% vs. 0% low APGAR score was less in our study and respiratory distress was 32.5% vs. 0.9%.[10] In one study, significantly higher rates of preterm and early preterm deliveries (defined as <37 and <34 weeks respectively) has been observed in polyhydramnios group compared with controls. In this study mean birth weight was similar along with controls whereas mean gestational age was ranging between 36 and 38 weeks.[11] Chen et al have also reported high incidence of preterm deliveries (OR: 2,4 95% CI) in their study in full term pregnancy and reported mean fetal birth weight of 2929 g in polyhydramnios group.[12] The incidence of preterm delivery was high in polyhydramnios with the mean gestational age of 37.9 weeks and the mean weight of 3350 g as described by Dorleijn et al.[13] In one study investigating perinatal outcome in idiopathic polyhydramnios, it was observed that in pregnant women have PROM, preterm labor, malpresentations, abruptio placenta and postpartum hemorrhage.[14] Abele H et al,[15] have reported that 10% cases of unexplained polyhydramnios had an anomaly found after birth. In patients with preterm pregnancies, polyhydramnios is one of the important variables which adds to intra- and post-partum mortality.[16] So higher preterm delivery rates should be considered in idiopathic polyhydramnios cases. APGAR scores shows fetal status at the time of delivery and is considered as the indicator of perinatal well being.

Inadequate fetal oxygen in delivery may contribute to relatively low scores as Hershkovitz et al have shown changed fetal middle cerebral artery pulsatility index in idiopathic polyhydramnios compared with normal AFI.[17]

CONCLUSION

Idiopathic polyhydramnios should be taken a high risk pregnancy. It should be managed in settings having adequate facilities of human resources and equipment for a detailed ante-partum fetal well-being surveillance including intrapartum fetal monitoring. Consultant neonatologist should attend delivery postpartum.

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