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ORIGINAL ARTICLE

A Study to Determine the Perinatal Outcome in Isolated Oligohydramnios at Term Pregnancy

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ABSTRACT

Objective: A Study to Determine the Perinatal Outcome in Isolated Oligohydramnios at Term Pregnancy
Study Design: A cross-sectional study
Place and Duration: Department of Gynecology and Obstetrics, Hayatabad Medical Complex from October 2022 to March 2023
Methodology: Our sample size was 250 which were divided into 1:1 including 125 cases with isolated oligohydramnios and 125 control cases. Patients with chronic medical disorders and having fetal anomalies or IUGR were excluded. The mode of delivery was noted. Neonatal outcomes in the form of Apgar score, baby weight and need for NICU were noted.
Results: The cases with isolated oligohydramnios were associated with an increased incidence of CTG changes, meconium-stained amniotic fluid and the cesarean section as compared to women with normal amount of amniotic fluid. There was no difference between the cases and controls as regards duration of labor, need for oxytocin augmentation, need for neonatal resuscitation, APGAR score at 5 minutes, NICU admission birth weight of neonates or incidence of LSCS for fetal distress. A significant association (OR=1.85, P<0.001) was found between caesarean section in mothers with oligohydramnios compared to controls.
Conclusion: Our study found increase cesarean section rate due to CTG changes and meconium stained liquor in isolated oligohydramnios. However neonatal outcome in the form of birth weight, Apgar score and NICU admission was same for both cases and control.
Keywords: Oligohydramnios, Perinatal, Term Pregnancy

INTRODUCTION

The term Oligohydramnios is meant to describe reduced amniotic fluid, AFI<5cm. It is considered to be associated with adverse perinatal outcome[1.] Amniotic fluid index is the estimation of amniotic fluid volume measured from all 4 quadrants around the fetus in the amniotic cavity[2]. Amniotic fluid index was described by Phelan[3]. Amniotic fluid surrounds and protects the growing fetus. It facilitate the exchange of nutrients, biochemical products and water through fetomaternal circulation .It is the transudate of maternal circulation before 16weeks period of gestation. In the later half of pregnancy, fetal urine contributes to the amniotic fluid . Fetal respiratory tract secretions also contribute to amniotic fluid production[4].For adequate growth and development of fetus, adequate amount of amniotic fluid is essential[5]. The overall incidence of oligohydramnios varies from approximately 0.5%[6] to 5%[7], depending on the definition of oligohydramnios. However,if associated with fetal anomalies the risk is upto 37%[8] .Oligohydramnios can be isolated or it can be associated with maternal or fetal conditions such as hypertension, premature rupture of membranes, fetal growth restriction and congenital anomalies.The adverse perinatal outcome in associated oligohydramnios is understood due to underlying medical condition or fetal anomalies but isolated oligohydramnios and the risk of adverse perinatal outcome is still unclear . In post-term pregnancies, placental insufficiency has been proposed as main factor of reduced amniotic fluid volume[9]. Alternatively, the maturation of the renal system can lead to a physiological increase of amniotic fluid absorption[9]. The purpose of this study was to determine the Perinatal Outcome in Isolated Oligohydramnios at Term Pregnancy in Peshawar teaching hospital.

METHODOLOGY

The prospective study was carried out in Department of Obstetrics and Gynecology at Hayatabad medical complex Peshawar from October 2022 to March 2023 after obtaining approval from hospital's ethical committee.This study included 250 (booked or unbooked) attending antenatal clinic or admitted in labour room of the department. The women enrolled in the study were divided in 2 groups in the ratio of 1:1. The study included 125 women with isolated oligohydramnios AFI < 5cm and these were compared with 125 low risk women with term pregnancy without oligohydramnios. The Inclusion criteria for cases and control were same including: term Pregnancy(37-42 weeks), Singleton pregnancy, Any Parity, BMI and mode of delivery, cephalic presentation. Exclusion criteria for cases and controls were patients with medical illness i.e ; gestational diabetes, hypertension and cardiac disease, multi fetal Gestation, congenital anomalies of fetus, premature rupture of membranes ,intrauterine growth restriction and intrauterine Fetal death. Women found having isolated oligohydramnios on clinical examination were subjected to ultrasound examination to confirm oligohydramnios. They were included in the study if AFI was less than 5. Amniotic fluid measurement was performed by ultrasound on low-risk women with term pregnancy fulfilling the inclusion criteria. Cardiotocography (CTG) was done. Patients with abnormal CTG at the time of diagnosis or any time during fetal surveillance were considered for intervention. No interventional drug was used during the course of the study. Informed written consent for participation in the study was taken.The data were collected in the form of social and environmental history, obstetric history, and maternal general and systemic examination. The mode of delivery was noted. Neonatal outcome in the form of apgar score, baby weight and need for NICU were noted. The data was analyzed using computer software SPSS version 26 for windows. Statistically significant differences were evaluated using the F test. A p value of <0.05 was considered statistically significant. For discrete data, relative (RR) was calculated.

RESULTS

The study included 125 people in each group's A and B. Group A included patients with isolated oligohydramnios at term and group B included patients at term with normal amniotic fluid.

Table 1 shows the distribution pattern of admission status, type of parity and gestational age in both groups which was not statistically significant.

Table 1: Distribution of both groups in terms of admission status, parity and gestational age

	Group A%	Group B%	P value
Admission Status			
Booked	43 (34.4%)	60 (48%)	0.600
Unbooked	82 (65.6%)	65 (52%)	0.471
Parity			
Primigravida	52 (41.6%)	60 (48%)	0.52
Multigravida	54 (43.2%)	42 (33.6%)	0.99
Grand multigravida	19 (15.2%)	23 (18.4%)	1.6
Gestational Age			
37-38 weeks	18 (14.4%)	22 (17.6%)	0.77
38-39 weeks	35 (28%)	42 (33.6%)	0.14
39-40 weeks	72 (57.6%)	61 (48.8%)	0.98

Table 2 shows the figures that in group A, 56% of patients had non-reactive CTG and 76.8% patients of in group A underwent induction of labour. Both of these conditions were statistically significant.

Table 2: Comparison of both groups based on CTG changes, Status of Labour at presentation

	Group A%	Group B %	P Value	Relative Risk
Non-Reactive CTG	70 (56%)	42 (33.6%)	<0.002	2.01
Spontaneous Labour	29(23.2%)	109(87.2%)	1.99	3.21
Induction Of Labour	96(76.8%)	16 (12.8%)	<0.004	2.78

Table 3 shows that 51.2% of Group A patients had cesarean section as compared to Group B which shows 18.4%.Similarly,47.2% Group A patients had meconium stained amniotic fluid. However the need of augmentation in both the groups was not statistically significant.

Table 3: Distribution of study participants in terms of outcome of labour in the form of cesarean section or need of augmentation

	Group A%	Group B%	P value	Relative Risk
Cesarean Section	64(51.2%)	23(18.4%)	<0.004	1.6
Meconium Stained Liquor(Msl)	59 (47.2%)	16 (12.8%)	<0.001	1.46
Requirement Of Augmentation With Oxytocin	57 (45.6%)	55 (44%)	0.34	0.23

The neonatal outcome in terms of birth weight,5mins apgar score, resuscitation requirement and admission in NICU in both the groups were not statistically significant.

Table 4: Neonatal outcome in study participants:

	Group `A %	Group B%	P value	Relative Risk
Birth Weight <2.5kg	9 (7.2%)	6 (4.8%)	0.87	1.02
5 Mins Apgar Score	45 (36%)	40 (32%)	0.45	0.98
Resuscitation Required	22 (17.6%)	18 (14.4%)	0.32	0.88
Admission In Nicu	19 (15.2%)	15 (12%)	0.59	0.23
Perinatal Mortality	3 (2.4%)	2 (1.6%)	0.10	1.2

DISCUSSION

Our study has shown that isolated oligohydramnios at term are not associated with adverse perinatal outcomes. No difference were observed regarding neonatal resuscitation, birth weight, apgar score and admission in NICU.A similar study was carried out by H. Ahmed in agha khan university which also showed the same perinatal outcome[10]. On the contrary, a study by Radhamani showed seventy percent neonates below 3Kg, five percent having low APGAR scores, and twenty-three percent requiring NICU care[13].

Regarding the mode of delivery, many authors have reported an increase in the rate of cesarean deliveries in association with isolated oligohydramnios at term. Our data are consistent with their results[11]. The rate of caesarean section is 51% in isolated oligohydramnios group. However study done by Amir et al reported the rate of caesarian to be forty-two percent in oligohydramnios cases in Peshawar[12]. Similar results were shown by another studies.[16,17]

Another Study done by Babitha et al also found an association between low birth weight, low APGAR score, meconium-stained liquor, and high rates of NICU admissions in neonates born with oligohydramnios[14,18.] However ,our study found increase rate of intervention in the form of cesarean section and increase risk of meconium stained amniotic fluid in Group A but no significance in neonatal outcome in both the groups.

CONCLUSION

The results of this study showed that women with isolated oligohydramnios in group A were associated with an increased risk of CTG changes, meconium stained amniotic fluid as compared to women with normal amount of amniotic fluid. There was an in-creased rate of cesarean sections in subjects with isolated oligohydramnios which can be due to obstetrician bias in decision. There was no significant difference with regards need for oxytocin augmentation, need for neonatal resuscitation, APGAR score at 5 minutes, NICU admission and birth weight of neonates.

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