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To evaluate the prevalence of severe oligohydramnios and its fallout at tertiary care center in Indore, M.P.

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Abstract
The aim of the study is to evaluate the prevalence of severe oligohydramnios in third trimester of pregnancy and its outcome. The main objective is to study the risk factors, complications associated with severe oligohydramnios and its impact on fetal outcome. A prospective observational study was carried out in department of Obstetrics & Gynecology, M.G.M. Medical College, and Indore. M.P, India. 414 patients out of 19073 (2.17%) were admitted with Amniotic Fluid index AFI<5cms with intact membranes were analysed for perinatal outcome during the period January 2019 to December 2019. More patients were reported in the age group of 20-24 years. 37.3% of patients showed primigravida and 62.8% of patients showed multigravida. 37.44% of people showed gestational period of >40weeks. All patients showed AFI ≤5cm. Lower Segment caesarian Section (LSCS) was done in 69.56% of patients and 30.43% of patient's undergone normal vaginal delivery. The patients in primigravida are more prone to oligohydramnios with associated factors such as GDM and anemia. In the third trimester, the complications resulting in the caesarian section was high in order to improve the fetal outcome. So timely screening for Amniotic fluid index (AFI) between intrapartum and postpartum pregnancy, proper antenatal checkup and lifestyle changes in patients helps to reduce the maternal risk factors and improve the fetal outcome.

Keywords: Oligohydramnios, amniotic fluid index, anemia, gravida, gestational age study design: observational study

Introduction
Amniotic fluid plays a major role in pregnancy. It maintains the homeostasis of fluid and electrolytes and fetal body temperature. It creates a physical space for the musculoskeletal development, promotes normal lung development and helps to avert compression. The amniotic fluid volume is that the result of interaction of the maternal and fetal fluid balances; fetal surface of the placenta and fetal body surface and directly from the mother in the initial period of gestation [1]. The amniotic fluid is measured by amniotic fluid index by using ultrasonography. An Amniotic Fluid Index from 8-20cm is considered normal while the Amniotic Fluid Index from 5.1-8cm is considered as borderline and <5cm is considered as low Amniotic Fluid Index [2]. Amniotic fluid surrounds and protects the fetus in the amniotic cavity. It provides a cushion against the constricting gravid uterus allowing the fetus room for movement, growth and protecting it from external trauma [3- 4]. The amount of amniotic fluid gets varied depending upon the gestation period. The amount increases rapidly with the growth of the fetal products, averaging 50ml at 12 weeks of pregnancy to 400 ml at 20 weeks of pregnancy. The average amount of AFI in 3rd trimester is 700-800ml. If the AFI is less than 5cm the condition is called oligohydramnios. Oligohydramnios is a common complication of all pregnancies and the incidence of this is reported to be around 5% of pregnancy. In some region the increase in oligohydramnios was due to increased environmental temperature which leads to maternal dehydration that causes fetal dehydration and urine output decreases which result in decreased amniotic fluid volume [5]. Abnormality of fluid volume can interfere directly with fetal development causing structural anomalies such as pulmonary hypoplasia, fetal hypoxia, neural tube defect and gastrointestinal obstruction [6]. The condition associated with oligohydramnios are premature rupture of the membrane, intrauterine growth retardation, maternal factors such as Gestational Diabetes Mellitus (GDM), pre-eclampsia, maternal hydration, anemia and idiopathic. This leads to fetal complication such as low birth weight, fetal distress and fetal death, Intrauterine Growth Retardation (IUGR) and increased Neonatal Intensive Care Unit (NICU) admission [7]. The maternal outcomes such as preterm delivery and labor induction in

Women with borderline AFI were considerably higher than those in normal group. Birth asphyxia was more common in babies delivered to patients with oligohydramnios. Neonatal morbidity was mainly due to meconium aspiration and neonatal sepsis [8]. This leads to increased LSCS and instrumental delivery in the mother during the pregnancy. The post-dated pregnancy, pregnancy induced hypertension and fetal congenital anomalies were the common complications associated with oligohydramnios. Pregnancy induced hypertension and post-dated pregnancies are the commonest causes of reduced amniotic fluid during the third trimester of pregnancy [9]. The present study aims to find out the prevalence of oligohydramnios in third trimester of pregnancy, outcome and its associated causes. The main objective of the study the risk factors, complications associated with oligohydramnios and its impact on fetal outcome.

Materials and Methods

A prospective observational study was carried out in department of Obstetrics & Gynecology, M.G.M. Medical College, and Indore. M.P, India. 414 patients out of 19073 (2.17%) were admitted with Amniotic Fluid index AFI<5cms with intact membranes were analysed for perinatal outcome during the period January 2019 to December 2019. All patients in third trimester with AFI less than or equal to 5cm, preeclampsia, gestational diabetes, maternal dehydration, eclampsia, anemia, ruptured membranes were included in the study. Exclusion criteria were patients with multiple gestation, intrauterine death of fetus, polyhydramnios, thyroid disorder, Cardio Vascular Disease, bleeding and known case of diabetes. Other than those, patient demographics, gravida, gestational week, menstrual history, mode of delivery and outcomes of both mother and fetus were studied. As per our knowledge there is no study conducted in our study area to assess the prevalence of oligohydramnios and its associated causes. The study may be helpful to find out the prevalence in our area.

Result and Discussion

Out of 19073 patients, 414 patients were reported with severe oligohydramnios (2.17%). The 57.97% of patients with severe oligohydramnios belong to the age group of 20-24 years as mentioned in table 1.

Table 1: Age wise distribution

S.no	Age group	Number of pateints	Percentage
1.	>19 yrs	13	3.14%
2.	20-24 years	240	57.97%
3.	25-29 years	129	31.16%
4.	>30 years	32	7.72%

Table 2: Parity wise distribution

S.no	Parity	Number of pateints	Percentage
1.	G1	154	37.19%
2.	G2	188	45.41%
3.	G3	64	15.45%
4.	G4	8	1.93%

Severe oligohydramnios was found in 188 (45.41%) 2nd gravid patient,154 primigravida patient (37.19%) shown in table 2.155 pateints (37.44%) were more than 40week period of gestation and 102 pateints (24.63%) of term pregnancy i.e 37-40 week Period of gestation shown in table 3.

Table 3: Distribution by period of gestation

S.no	Parity	Number of pateints	Percentage
1.	<32 Week	68	16.42%
2.	32-37Week	89	21.49%
3.	37-40 Week	102	24.63%
4.	>40week	155	37.44%

258 baby were IUGR (62.31%) born to patients with severe oligohydramnios shown in table 4. And 288 pateints (69.56%) underwent LSCS for Severe oligohydramnios shown in table 5.

Table 4: IUGR in severe oligohydroamnios

S.no	IUGR	Number of pateints	Percentage
1.	Normal baby	156	37.68%
2.	IUGR Baby	258	62.31%

Table 5: Outcome in severe oligohydroamnios

S.no	Outcome	Number of pateints	Percentage
1.	Conservative	0	0
2.	Normal delivery	126	30.43%
3.	LSCS	288	69.56%

Discussion

The patients with age group of 25-29 yrs showed increased risk to oligohydramnios as most women have their normal menstrual cycle between the age group of 21-25 and our results were at par with the study conducted by krishna J *et al.* [3] in the year 2013 and Chaitra *et al.* [10] in the year 2016. The prevalence of oligohydramnios were highly reported in patients having primigravida which is similar to the study conducted by Mathuriya G *et al.* [2] in the year 2017 and Chaitra *et al.* [10] in the year 2016.The prevalence of oligohydramnios are reported highly in patients with gestational age of >40 weeks which is comparable to the study conducted by Moses V *et al.* [4] in the year 2016. This may be due to either uterine insufficiency or reduced fetal urine production. Other than that maternal fluid balance plays a role during the late gestation [11]. The amniotic fluid index were classified into normal (>10cm), borderline (> 5cm to ≤10cm) and low (≤5 cm) in which 25 patients shows low AFI. AFI less than or equal to 5 cm is considered as oligohydramnios shows more risk which is similar in the study conducted by Padma S *et al.* [12]. in the year 2016. The reason behind the decreased AFI is maternal dehydration, placental insufficiency, pre- eclampsia, gestational diabetes etc., in our study, the patient with GDM showed more risk to oligohydramnios. The study conducted by Maryam A *et al.* [8] found that preeclampsia is highly associated during pregnancy. Similarly, the study conducted by Sasahara J *et al.* [11] found that Preeclampsia and PROM show more risk to oligohydramnios than gestational diabetes mellitus which is different when compared to our study. The 24 patients with oligohydramnios shows higher risk to caesarian section which is in concordance with the study conducted by Padma S *et al.* [12] found that increased incidence of LSCS are reported in patients with oligohydramnios. In order to improve maternal and fetal outcome c-section were highly preferred. The study conducted by Moses *et al.* [4] in the year 2016 and Padma S *et al.* [12] in the year 2017 found that increased incidence of LSCS was due to oligohydramnios followed by fetal distress which is comparable with our study. The study conducted by Mathuriya G *et al.* [2] in the year 2017 and Chaitra *et al.* [10] in the year 2016 found that fetal outcome was good in babies score ≥7 which is similar to our study. In our study, the maximum babies were alive and

healthy. However, the admission of neonatal care due to respiratory distress syndrome was present which is comparable with the study conducted by Ghimire S [14] in the year 2014.

Conclusion

Oligohydramnios is frequent during the pregnancy. It is detected by ultrasonography with AFI range below or equal to 5cm detected before 37 weeks indicates good perinatal outcome. From this study, we conclude that patients in primigravida are more prone to oligohydramnios with associated factors such as GDM and anemia. In the third trimester, the complications resulting in the caesarian section was high in order to improve the fetal outcome. So timely screening for AFI between intrapartum and postpartum pregnancy, proper antenatal checkup and lifestyle changes in patients help to reduce maternal risk factors and improve the fetal outcome.

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