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RELATION BETWEEN OLIGOHYDRAMNIOS AND FETOMATERNAL OUTCOMES IN 3RD TRIMESTER OF PREGNANCY

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ABSTRACT

Background: Oligohydramnios is a critical obstetric disorder, which is afflicted with decreased amniotic fluid volume, which is known to increase the risk of poor maternal and infant outcomes, especially during the third trimester of pregnancy.

Aim: To evaluate the relationship between oligohydramnios and fetomaternal outcomes in the third trimester and to compare these outcomes with pregnancies having normal amniotic fluid index.

Methods: This descriptive case series study was carried out at Al-Aleem Medical College, Lahore, Gulab Devi Hospital in a period of five months from 1st December, 2025 to 30th April, 2026 and involved 200 pregnant women who were sampled using non-probability consecutive sampling. The study subjects were classified into oligohydramnios (AFI <5 cm) and normal AFI (≥5 cm). The data collected was analysed using SPSS version 26 and chi-square and independent t-tests were used where necessary to analyze data on maternal characteristics, labour outcomes and fetal outcomes.

Results: Women with oligohydramnios had significantly higher rates of induction of labour (62% vs 34%), cesarean section (66% vs 32%), fetal distress (36% vs 14%), and intrauterine growth restriction (29% vs 11%). Fetal outcomes were also significantly worse, including low birth weight (57% vs 22%), low Apgar score (39% vs 13%), NICU admission (44% vs 16%), and neonatal mortality (9% vs 2%) ($p \leq 0.05$).

Conclusion: Oligohydramnios is closely linked with unfavorable fetomaternal outcomes and is a high-risk situation that needs to be diagnosed early, monitored precisely, and an obstetric intervention taken to prevent adverse outcomes.

KEYWORDS: Oligohydramnios, amniotic fluid index, fetal outcomes, maternal outcomes, cesarean section, NICU admission, low birth weight

INTRODUCTION

Oligohydramnios, which is a decreased amniotic fluid volume usually measured as an amniotic fluid index (AFI) of below 5 cm or a single deepest pocket under 2 cm is a major obstetric complication during the third trimester of pregnancy (Zafar et al., 2022). Amniotic fluid is also important in fetal development because it helps in the development of the lungs, mechanical injury protection, and fetal movement, thus having a direct impact on perinatal outcomes (Vidyasagara et al., 2021). The worldwide prevalence of oligohydramnios is reported as 1-5% in usual pregnancies but can reach 12% in high-risk groups (Zeb et al., 2025). Oligohydramnios etiology is multifactorial, comprising placental insufficiency, pre-term membrane rupture, fetal kidney abnormalities, and late pregnancy (Abdullah and Ahmed, 2023). Uteroplacental insufficiency is one of the most common causes in the third trimester and is usually a manifestation of comorbidities in mothers, including hypertension and diabetes mellitus (Kujur et al., 2025). A decreased placental volume of amniotic fluid has been repeatedly linked to poor fetal outcomes such as intrauterine growth restriction (IUGR), fetal distress, and perinatal morbidity. Thus, prompt diagnosis and care at the third-trimester level is essential to ensure optimal maternal and neonatal outcomes in case of pregnancy with Down syndrome (Ingle et al., 2022).

The correlation between oligohydramnios and poor fetal outcomes has been widely investigated and has shown high correlations with higher perinatal morbidity (Niamrat et al., 2023). Research has found that cesarean section rates of pregnancies complicated with oligohydramnios are 40-70 times higher than normal pregnancies (Prajapati and Johar, 2021). There are also significant differences in fetal complications (low Apgar scores at 5 minutes, neonatal intensive

care unit (NICU) admissions and meconium-stained liquor) (Kechagias et al., 2024). The pathophysiology includes chronic fetal hypoxia due to uteroplacental insufficiency, which causes fetal hemodynamic redistribution and decreased perfusion of the kidneys (Nagar et al., 2022). It can also impact maternal outcomes, where oligohydramnios frequently leads to an increase in the level of surveillance required, the induction of birth, and the extension of hospital stay (Bumrah et al., 2023). Empirical research has shown that women who did not receive oligohydramnios tend to undergo fewer interventions and more desirable perinatal outcomes (Khattak et al., 2025). Moreover, oligohydramnios has been implicated in long-term neonatal morbidity, such as respiratory distress syndrome and developmental retardation (Rahman and Pervin, 2022).

The diagnostic methods of oligohydramnios are mainly based on ultrasonographic readings that have become the gold standard of obstetrics practice (Yadav et al., 2021). Amniotic fluid index and single deepest pocket are the most common methods, and each has certain benefits and shortcomings in clinical practice. Studies indicate that the single deepest pocket technique is potentially less intrusive of needless interventions and yet the outcomes of the fetus are not affected, relative to AFI (Punithavathi et al., 2022). Although imaging methods have improved, measurement variability and reliance of operators are some of the problems that hinder the accurate diagnosis of oligohydramnios. Moreover, it remains a controversial point to debate the best possible threshold values of intervention, especially with borderline cases (Choudhary et al., 2025). Comparison of women with normal levels of amniotic fluid and those with oligohydramnios gives the important insight of the risk stratification and management guidelines. Hence, the regular third-trimester gynecological check-ups would act as a crucial source of early detection and prompt management (Kechagias et al., 2024).

The impact of oligohydramnios and related comorbidities in Pakistan is especially alarming as it is associated with poor access to high-quality antenatal care and late diagnosis (Masood et al., 2021). In tertiary care hospitals in Pakistan, it has been reported that oligohydramnios is prevalent at 6-10% which is higher than the global rates because of higher maternal risk factors (Ali and Deka, 2023). Some of these contributing factors are maternal malnutrition, hypertensive disorders, and insufficient prenatal surveillance, which factor worsens fetomaternal risks (Iqbal et al., 2022). Moreover, there are also healthcare disparities between the urban and rural areas that further complicate the early detection and management of oligohydramnios (Mohammed and Ahmed, 2024). There is a gap in the literature as comparative studies have not been conducted between women who have and do not have oligohydramnios in local settings. These differences are vital to comprehending context-specific clinical guidelines and enhancing maternal and neonatal outcomes. The study is aimed to examine the relationship between oligohydramnios and fetomaternal outcomes in the third trimester among Pakistani population.'

METHODS

Study Design and Setting

The research was a descriptive case series study at Al-Aleem Medical College, Gulab Devi Hospital, Lahore in december 2025 through April 2026. The research environment is a teaching hospital in the tertiary care which offers obstetric and gynecological services to a varied patient population. The study was aimed at assessing the connection between oligohydramnios and the fetomaternal outcomes during the third trimester of pregnancy. Non-probability consecutive sampling method was used to recruit those who came to outpatient and antenatal departments. Inclusion criteria were all eligible patients at regular antenatal check-ups within the study period. The research proposal complied with the ethical considerations, such as confidentiality and voluntary involvement. All the participants were informed before enrolling in the study and informed consent was given to them in writing. All the participants received the study protocol in a consistent manner to ensure the implementation of the study methodology.

Sample Size and Sampling Technique

The prevalence rate of oligohydramnios was stated as 8 percent and a total of 200 pregnant women was estimated based on 95 percent confidence level, 4 percent margin of error and the prevalence rate of 8 percent oligohydramnios. The sample size estimation was sufficient to provide sufficient statistical power to explore significant differences in the outcomes of fetomaternal between groups. Participants were chosen through a non-probability consecutive sampling technique which enabled the selection of all the eligible women who presented throughout the study period. This method reduced selection bias and it was feasible within that time frame. The population was categorized into two subgroups of the study population (based on ultrasound results) cases (oligohydramnios) and controls (normal amniotic fluid levels). The recruitment process was continued till the desired sample size was obtained. All participants were recruited with regard to the eligibility requirements. Sampling procedure was suitable to a hospital-based descriptive study design.

Inclusion and Exclusion Criteria

The inclusion criteria included pregnant women who are aged between 18-40 years, have a gestational age of 28 weeks or more, which was as calculated by the last menstrual period. Only those women who had singleton pregnancy and attended normal antenatal check-ups were included into the study. Ultrasound confirmation of fetal viability and assessment of amniotic fluid index were mandatory for eligibility. Multiple pregnant women were not included in the

study to prevent confounding of the amniotic fluid volume and results. Also, women whose fetuses had congenital anomalies identified during examinations of the ultrasound or prenatal tests were not included. The exclusion criteria also included maternal comorbidities such as pre-existing hypertension (blood pressure (90mmHg greater than 140mmHg on two measurements) or diabetes mellitus, renal disease, or severe anemia (hemoglobin less than 8 g/dL). Pregnancies with complications by placenta previa or placental abruption were excluded. Moreover, women who had a history of premature membrane rupture before the onset of the diagnosis of oligohydramnios were not considered in the study.

Data Collection

The process of data collection was activated once a full ethical approval of all the participants and informed consent was obtained. A structured proforma was used to enter maternal demographic variables, such as age, parity, gestational age, and other pertinent medical history. Volume of amniotic fluid was measured by ultrasound and each participant had amniotic fluid index (AFI) calculated. Women, with an AFI below 5 cm, were put under the oligohydramnios (case) group and others with normal levels of AFI were allocated to the control group. The respondents were observed through to the end of pregnancy with frequent antenatal checkups to act as a test to the maternal and fetal health. As labor and delivery progressed, specific details about mode of delivery, labor complications and morbidity on the mother were noted. Systematic recordings of fetal outcomes were made such as birth weight, Apgar scores, fetal distress, and neonatal morbidity such as the NICU admission. Trained healthcare professionals were used to collect all data in order to make it accurate and reliable. The data gathered were used in a pre-programmed database to be analyzed later.

Data Analysis

The analysis of the data was conducted with the assistance of Statistical Package of Social Sciences (SPSS) 28. Qualitative variables such as frequencies and percentages of maternal and fetal outcomes were reported. Quantitative variables like maternal age, gestational age, and Apgar scores were represented in terms of mean and standard deviation. The chi-square test of categorical variables was used to make comparative analysis between the oligohydramnios and normal group. To eliminate possible confounding factors, stratification of data was done according to maternal age, gestational age, and parity. The relationships between oligohydramnios and fetomaternal outcomes in sub groups were tested using post-stratification chi-square. A p-value of ≤ 0.05 was considered statistically significant. To provide clarity and interpretation, the results have been presented in a tabular and a chart format. All the analyses have been conducted with the aim of statistical rigor to guarantee validity and reliability of the results.

Ethical Considerations

The study was ethically approved in the Institutional Ethical Review Committee of Al-Aleem Medical College, Gulab Devi Hospital, Lahore before data collection started. The research was done as per the guidelines of the Declaration of Helsinki to protect the rights and wellbeing of the participants. All participants gave informed consent in writing after having the consent fully explained to them in a language, they understood how the study would be done, potential risks, and benefits of the study.

RESULTS

The study consisted of 200 pregnant women which were matched in two groups in which 100 pregnant women were under oligohydramnios category and the other 100 women under normal amniotic fluid index (AFI) category. The maternal age showed a statistically significant difference, and the mean maternal age of the group with oligohydramnios was 29.8 ±4.2 years versus the normal AFI with a mean of 27.6 ±3.8. The oligohydramnios group (20.5 ±2.3 years) and the controls (21.8±2.1 years) had a statistical difference in the mean age at marriage. Marriage time was much higher in the oligohydramnios group (7.8 ± 3.1 years vs 5.9 ± 2.8 years, p=0.001). Sixty-four percent of oligohydramnios cases were high parity (>=2) as opposed to 48 percent in controls (p=0.021). Oligohydramnios group had a large proportion of chronic hypertension (28% vs 10%, p=0.001). Likewise, diabetes mellitus (22% vs 9%, p=0.008) and maternal malnutrition (31% vs 14%, p=0.004) were also more prevalent in women with oligohydramnios, and thus there was a higher risk profile of baseline.

Table 1: Baseline Characteristics of Study Participants

Variable	Oligohydramnios (n=100)	Normal AFI (n=100)	p-value
Maternal age (years)	29.8 ± 4.2	27.6 ± 3.8	0.001
Age at marriage (years)	20.5 ± 2.3	21.8 ± 2.1	0.002
Duration of marriage (years)	7.8 ± 3.1	5.9 ± 2.8	0.001
Parity ≥2	64 (64%)	48 (48%)	0.021
Chronic hypertension	28 (28%)	10 (10%)	0.001
Diabetes mellitus	22 (22%)	9 (9%)	0.008
Malnutrition	31 (31%)	14 (14%)	0.004

The induction of labour was also much greater in the oligohydramnios group, 62% compared to the normal AFI 34% (p=0.0001) whereas the spontaneous labour was more prevalent in the controls (66% vs 38%, p=0.0001). Amongst the signals of cesarean section fetal distress was most elevated in oligohydramnios (36% vs 14%, p=0.0003) and IUGR was additionally significant (29% vs 11%, p=0.001), but breech presentation (11% vs 6%, p=0.20) was not, nor CPD (19 There was a significant decrease in clear amniotic fluid in oligohydramnios (41% vs 78%, p=0.0001) and significant increase in thin meconium (26% vs 14%, p=0.03) and thick meconium (33% vs 8%, p=0.0001), demonstrating greater fetal compromise. With respect to mode of delivery, normal vaginal delivery was much lower in oligohydramnios (34% vs 68%, p=0.0001) whereas LSCS was much greater (66% vs 32%, p=0.0001).

Table 2: Maternal Outcomes of Study Participants

Variable	Oligohydramnios (n=100)	Normal AFI (n=100)	p-value
Onset of Labour			
Induced labour	62 (62%)	34 (34%)	0.0001
Spontaneous labour	38 (38%)	66 (66%)	0.0001
Indications for LSCS			
Breech	11 (11%)	6 (6%)	0.20
Fetal distress	36 (36%)	14 (14%)	0.0003
CPD	19 (19%)	11 (11%)	0.09
IUGR	29 (29%)	11 (11%)	0.001
Others	15 (15%)	9 (9%)	0.18
Type of Amniotic Fluid			
Clear	41 (41%)	78 (78%)	0.0001
Thin meconium	26 (26%)	14 (14%)	0.03
Thick meconium	33 (33%)	8 (8%)	0.0001
Mode of Delivery			
Normal vaginal delivery	34 (34%)	68 (68%)	0.0001
LSCS	66 (66%)	32 (32%)	0.0001

In oligohydramnios, low birth weight (<2.5 kg) was seen in 57% compared to 22% in controls (p=0.0001). The oligohydramnios group had a higher Apgar score <7 (39% vs 13%, p=0.0001). NICU admissions were also more frequent (44% vs 16%, p=0.0001). The cases of oligohydramnios had a higher rate of neonatal mortality (9% vs 2%, p=0.03). These results attest to the fact that fetal results are much worse in the oligohydramnios group.

Table 3: Fetal Outcomes of Study Participants

Variable	Oligohydramnios (n=100)	Normal AFI (n=100)	p-value
Birth weight <2.5 kg	57 (57%)	22 (22%)	0.0001
Birth weight ≥2.5 kg	43 (43%)	78 (78%)	0.0001
Apgar score <7	39 (39%)	13 (13%)	0.0001
Apgar score ≥7	61 (61%)	87 (87%)	0.0001
NICU admission	44 (44%)	16 (16%)	0.0001
Neonatal death	9 (9%)	2 (2%)	0.03

Maternal age (29.8 ± 4.2 vs 27.6 ± 3.8 years), age at marriage (20.5 ± 2.3 vs 21.8 ± 2.1 years), duration of marriage (7.8 ± 3.1 vs 5.9 ± 2.8 years), and gestational age showed normal distribution (p>0.05), justifying use of independent sample t-test. Conversely, the birth weight and Apgar score were not normally distributed (p<0.05) and therefore they had to be grouped according to clinical groups in chi-square analysis. All other maternal variables (induction, LSCS indications, liquor type, mode of delivery) and fetal variables (NICU admission, mortality) were categorical in their nature and represented in an adequate way with the help of chi-square test. This guaranteed proper statistical use of all maternal and fetal outcome variables.

Table 4: Normality Testing of Quantitative Variables Using Shapiro–Wilk Test

Variable	Statistic (W)	p-value
Maternal age (years)	0.982	0.091
Age at marriage (years)	0.978	0.064
Duration of marriage (years)	0.976	0.058
Gestational age (weeks)	0.984	0.103
Birth weight (kg)	0.969	0.021
Apgar score (5 min)	0.965	0.015

Mother age was found to be significantly greater in oligohydramnios (29.8 vs 27.6 years, p=0.001) whereas age at marriage was lower (20.5 vs 21.8 years, p=0.002). Marriage was also longer (7.8 vs 5.9 years, p=0.001), gestational age at delivery was also lower (36.2 vs 37.4 weeks, p=0.0001), which means the oligohydramnios were born earlier. These results indicate statistically significant baseline quantitative variables difference across groups.

Table 5: Independent Sample t-test for Quantitative Variables

Variable	Oligohydramnios (n=100)	Normal AFI (n=100)	Mean Difference	p-value
Maternal age (years)	29.8 ± 4.2	27.6 ± 3.8	2.2	0.001
Age at marriage (years)	20.5 ± 2.3	21.8 ± 2.1	-1.3	0.002
Duration of marriage (years)	7.8 ± 3.1	5.9 ± 2.8	1.9	0.001
Gestational age (weeks)	36.2 ± 1.8	37.4 ± 1.5	-1.2	0.0001

Induction of labour was significantly higher in oligohydramnios (62% vs 34%; χ^2=15.8, p=0.0001). Fetal distress (36% vs 14%; χ^2=13.5, p=0.0003) and IUGR (29% vs 11%; χ^2=10.6, p=0.001) were significantly more frequent. Thick meconium was markedly higher (33% vs 8%; χ^2=18.9, p=0.0001), reflecting fetal compromise. Cesarean section rate was significantly elevated (66% vs 32%; χ^2=23.1, p=0.0001), confirming that oligohydramnios is associated with increased obstetric intervention and adverse maternal outcomes. Low birth weight was significantly higher in oligohydramnios (57% vs 22%; χ^2=26.4, p=0.0001). Low Apgar score was also increased (39% vs 13%; χ^2=18.7, p=0.0001). NICU admissions were significantly more frequent (44% vs 16%; χ^2=21.5, p=0.0001), and neonatal mortality was higher (9% vs 2%; χ^2=4.7, p=0.03). These findings clearly demonstrate significantly worse fetal outcomes.

Table 6: Chi-Square Comparison of Maternal and Fetal Outcomes

Variable	Oligohydramnios (n=100)	Normal AFI (n=100)	χ^2	p-value
Induction of labour	62 (62%)	34 (34%)	15.8	0.0001
Fetal distress	36 (36%)	14 (14%)	13.5	0.0003
IUGR	29 (29%)	11 (11%)	10.6	0.001
Thick meconium	33 (33%)	8 (8%)	18.9	0.0001
LSCS	66 (66%)	32 (32%)	23.1	0.0001
Low birth weight	57 (57%)	22 (22%)	26.4	0.0001
Low Apgar score	39 (39%)	13 (13%)	18.7	0.0001
NICU admission	44 (44%)	16 (16%)	21.5	0.0001
Neonatal death	9 (9%)	2 (2%)	4.7	0.03

DISCUSSION

This study focused on assessing the association between oligohydramnios and fetomaternal outcomes during the third trimester; and comparing the outcomes with those of pregnancies with normal amniotic fluid index. The analysis has shown that women with oligohydramnios exhibited a far higher mean maternal age (29.8 ± 4.2 years) than 27.6 ± 3.8 years in controls (p=0.001), meaning that there is a heightened risk with the maternal age. On the same note, the oligohydramnios group had a longer duration of marriage (7.8 ± 3.1 vs 5.9 ± 2.8 years, p=0.001) indicating greater parity and cumulative obstetric exposure. Median chronic hypertension was significantly higher (28% vs 10%, p=0.001) in line with a latest Pakistani research among 104 pregnant women that shows hypertensive disorders in up to 25-30% of cases with oligohydramnios (Gul et al., 2025). It also had a higher rate of diabetes mellitus (22% vs 9%, p=0.008), which is similar to the 18-24% prevalence rates in other comparable populations (Talesara et al., 2021). There was a significant relationship between maternal malnutrition (31% vs 14%, p=0.004), especially where resources are limited (Khan et al., 2021). These differences in baselines suggest that oligohydramnios has close links with maternal underlying risk factors.

The maternal outcomes of the study were clear that obstetric risk was more pronounced in cases of oligohydramnios especially in terms of labour and mode of delivery. The rate of induction of labour was much higher in oligohydramnios group (62% vs 34% p=0.0001), which is similar to previously reported rates of 55-65% among 101 pregnant women (Kulsoom et al., 2025). In 36% of cases fetal distress was detected versus 14% in controls (p=0.0003) as expected based on published rates of 30-40% in affected pregnancies. Intrauterine growth restriction was also notably more frequent (29% vs 11%, p=0.001), which fits the prevalence rates of IUGR of 25-35% in oligohydramnios. The rate of cesarean section was significantly higher (66% vs 32% p=0.0001), as it was in the study by Rani et al., (2025) among 176 women, with the rates over 60%. The upsurge in the rate of operative birth indicates an augmented level of intrapartum observation and fetal infringement (Rani et al., 2025).

The severity of fetal compromise in oligohydramnios was further identified through the characteristics of the amniotic fluid. Oligohydramnios (41% vs 78%, p=0.001) had a significantly lower clear fluid and thick meconium (33% vs

8%, p=0.001) was significantly increased. It also had an increased proportion of thin meconium (26% vs 14%, p=0.03), indicative of progressive hypoxic stress. These results are in line with a case control study among 300 patients that mention meconium-stained liquor in 30-50% of cases of oligohydramnios (Iqbal et al., 2022). The high rates in this research are suggestive of the pathophysiology of the relationship between a low amniotic fluid and fetal hypoxia. Comparative statistics show that normal AFI pregnancies can hardly have a higher incidence of 10% thick meconium (Alam et al., 2023). Thus, the results are a strong indicator of clinical significance of AFI as a predictor of intrapartum fetal status. These findings also confirm the importance of close monitoring of these pregnancies.

The results of fetuses in this study were very poor, which shows that this is a high-risk factor. The proportion of low birth weight (<2.5 kg) was 57% versus 22% in controls (p=0.0001), which is similar to reported rates of 50-60% in an Ethiopian study among 264 women with oligohydramnios (Molla et al., 2023). The immediate compromise of the neonatal condition was evident by low Apgar scores (<7) that were significantly high (39% vs 13%, p=0.0001). The NICU admissions were similarly high (44% vs 16%, p=0.0001), which is similar to Mushtaq et al., (2023) among 64 patients mentioned rates of 40-50%. Oligohydramnios had a higher neonatal mortality rate (9% vs 2%, p=0.03) compared to the global rates of 5-10% in severe cases (Mushtaq et al., 2023). These results suggest that there is a close relation between oligohydramnios and unfavorable neonatal outcomes. There is a huge difference in the number of NICU admissions that indicate high morbidity burden. On the whole, the findings reveal a predictable trend of impaired fetal health.

The chi-square test also further enhanced the relationship between oligohydramnios and poor fetal maternal outcomes. Cesarean section was well related (χ^2=23.1, p=0.0001) meaning that there was great probability of operative birth. Proactive obstetric management was also significantly related (χ^2=15.8, p=0.0001) with induction of labour. The low birth weight showed high chi-square (χ^2=26.4, p=0.0001) indicating that it is strongly associated with oligohydramnios. Similarly, NICU admission (χ^2=21.5, p=0.0001) and low Apgar score (χ^2=18.7, p=0.0001) were significantly associated. These results are consistent with a cross sectional study that have found those statistical values to be significant within cohorts of 113 pregnant women with oligohydramnios (Zeb et al., 2025). The observed strength of association shows oligohydramnios as a risk factor on its own. These statistical correlations are strong arguments in favor of clinical decision-making. The findings support the prognostic value of AFI in obstetric results.

Along with this, the research offers high-quality evidence that oligohydramnios is linked to much more maternal and fetal difficulties. The high-risk nature is evident in the uniformly high cesarean section (66%), NICU admission (44%), low birth weight (57%), and low Apgar score (39%) rates. These results align with an Indian case control study among 100 pregnant women that announced such patterns compared to controls (50% vs. 20%, p=0.001) (Dutta et al., 2025). The multiple variability statistical significance ($p \leq 0.0001$) enhances the credibility of the results. The maternal comorbidities like diabetes and hypertension in accelerating the outcomes can also be noted in the study. The extent of risk is significantly greater in comparison with normal AFI pregnancies. These results reiterate the significance of early detection and close observation. Oligohydramnios must thus be regarded as a serious symptom of poor fetomaternal prognosis.

Although this study has found important results, it has a number of limitations which need to be considered in the interpretation of results. The respondent was studied in only one tertiary care center, thus, restricting the extrapolation of the results to the general population. Non-probability consecutive sampling might create selection bias which can in turn affect sample representativeness. The sample size of 200 participants was large enough to facilitate statistical analysis; however, multicenter studies with more participants would be more solid and generalizable. Some of the possible confounding factors were not delved into further, including maternal nutritional status, beyond basic categorization, and socioeconomic factors. Some of the continuous variables (e.g., birth weight and Apgar score) might have been categorized thus, losing detailed information. There was also a lack of long-term neonatal outcomes to help comprehend long-term morbidity. It also used ultrasound based AFI which is prone to inter-rater variability.

CONCLUSION

This study found that oligohydramnios during the third trimester is a highly predictive adverse fetomaternal outcome, and a high-risk condition to be closely monitored. Oligohydramnios showed a great difference with the normal amniotic fluid levels; the percentage of cesarean section (66% vs 32%), induction of labour (62% vs 34%) and fetal distress (36% vs 14%) were observed to be significantly higher. There was also a significant impact on fetal outcomes in terms of low birth weight (57% vs 22%), low Apgar scores (39% vs 13%), NICU admission (44% vs 16%), and neonatal mortality (9% vs 2%). These results point to the high predictive sensitivity of low amniotic fluid index on maternal and neonatal complications. The statistically significant covariations found among a variety of variables support the clinical significance of a regular third-trimester ultrasound examination. Oligohydramnios can be identified early enough to make the right obstetric decisions, such as to induce labor and be ready to deliver by operation. The paper has highlighted the importance of careful antenatal care especially to women who are at an increased risk due to other conditions like hypertension and diabetes. In general, oligohydramnios is a severe marker of impaired fetoplacental functioning and adverse pregnancy outcomes.

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