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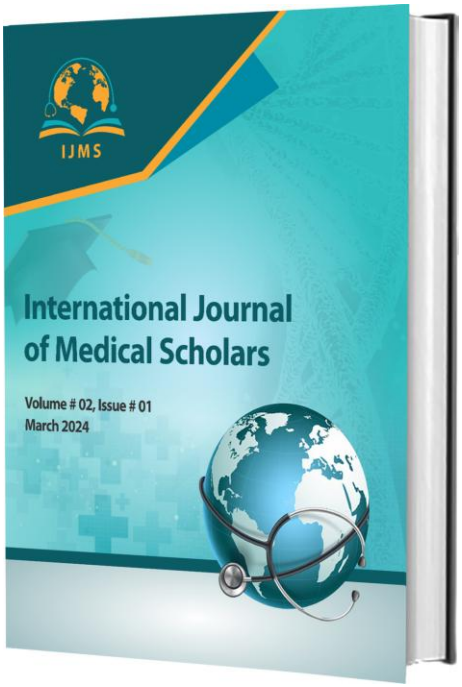

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Original Article

Comparative study of obstetrical complications between primigravida and multigravida

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ABSTRACT

Objective: *to evaluate correlation of blood total cholesterol (TC), high-density lipoprotein (HDL), triglycerides, and the TC:HDL ratio as risk factors for ischemic stroke.*

Methods: *After ethical approval from hospital ethical board this case control study was conducted in the department of neurology Nishtar Hospital, Multan Duration of study was two years from October 2022 to Sept 2023. A total of 600 patients were included in the study after obtaining written consent from patients. After completion of data collection, data was entered in computer software SPSS version 23 and analyzed for continuous and categorical variables. Continuous/numerical variables were presented as mean and SD and categorical variables were presented in form of numbers and percentages. Independent t-test and chi-square test were applied to see significance of data. P value less than or equal to 0.05 was considered as significant.*

Results: *Overall, 600 patients were included in this study. The study comprised of two equal groups, 50% (n=300) in each, i.e. cases and controls. The controls had mean TC, HDL and triglycerides 220.76±4.29 mg/dL, 54.02±4.45 mg/dL and 153.99±2.68 mg/dL respectively. The TC:HDL ratio was 5.48±1.41 and 4.09±1.22 for cases and controls respectively. The mean differences between TC, HDL, triglycerides and TC: HCL ratios were statistically significant among both groups.*

***Conclusion*:** *Results of our study revealed that significant difference was observed between cases and controls regarding the levels of Total cholesterol , HDL, triglycerides and TC:HDL ratio. Cases of ischemic stroke were found with high levels of TC, Tridlycerides, And TC:HDL ratio and low HDL , this difference was found statistically significant with P value 0.001. so it was concluded that hyperlipidemia has significant relation with ischemic stroke.*

Keywords: *Ischemic Stroke, Total cholesterol, High density lipids, Triglycerides*

1. INTRODUCTION

Pregnancy is a physiological stress on the human body and makes females susceptible to various diseases and infections. When these disorders are complicated by pregnancy, they can have dangerous and life-threatening impacts on both the mother's and the baby's health. Complications can arise at any time during pregnancy, potentially leading to death or other health issues for either the mother or the fetus. Each year, approximately 287,000 women die due to complications related to pregnancy and delivery, with 99% of these cases occurring in developing countries.

According to the report, Pakistan is one of six countries with a very high maternal death rate. During pregnancy, labor, and the postpartum period, mothers face numerous problems that require urgent management. Complications during pregnancy can include vaginal bleeding, swelling of the legs, hands, or face, acute abdominal pain, and blurred vision.

High parity and a decreased inter-pregnancy interval are suggested to be major causes of poor maternal and perinatal outcomes. These factors can lead to complications such as anemia, hypertension, placenta previa, fetal distress, postpartum hemorrhage due to uterine atony, and uterine rupture. In a study by Baruah C, it was found that primigravida women had higher frequencies of pregnancy-induced hypertension (53%), fetal distress (23%), malposition (7.8%), preterm labor (6%), and oligohydramnios (5.8%) compared to multigravida women, who had lower rates of these conditions: pregnancy-induced hypertension (44%), fetal distress (9%), malposition (5.3%), preterm labor (2.5%), and oligohydramnios (1.3%). Additionally, various chemicals have been reported in urine, blood, and amniotic fluid, indicating that pregnant women worldwide are significantly exposed to chemicals.

It is estimated that 90% of all genetic variations in humans are due to single nucleotide polymorphisms. Over the past few decades, numerous epidemiological studies have suggested associations between genetic variants and the risk of pregnancy complications and adverse birth outcomes, such as preterm birth, preeclampsia, birth defects, and small for gestational age. Many genetic loci have been identified as linked to these pregnancy complications and poor birth outcomes. However, scientific literature comparing primigravida and multigravida women is lacking. In the absence of clear evidence on this subject, physiological stresses on both the mother and fetus are increasing, and the financial burden on middle-class families is a significant issue. Therefore, I planned to compare the frequency of obstetrical complications in primigravida and multigravida women in the local population. This study aims to provide insights that will help develop a proactive approach for the proper management of pregnant women based on their parity status.

2. METHODOLOGY

This descriptive case study was conducted in the Department of Obstetrics and Gynecology at Nishtar Hospital, Multan, from September 10, 2019, to March 10, 2020. The sample size was calculated using a 1.3% prevalence of oligohydramnios in multigravida women, a 1% margin of error, and a 95% confidence interval, according to the WHO formula for sample size determination in health studies. A total of 493 patients were included, all females aged 18-35 years, with primigravida or multigravida status as per the operational

definition, singleton pregnancy confirmed by ultrasound, and gestational age greater than 20 weeks based on the last menstrual period. Females with a history of hypertension, diabetes, or more than one previous C-section were excluded from the study.

A total of 493 females who met the inclusion criteria were enrolled in the study from the outdoor Department of Obstetrics and Gynecology at Nishtar Hospital, Multan, after obtaining permission from the CPSP ethical committee. Written consent was obtained from all participants. Basic demographic data, including age, parity, weight (measured using a weighing machine), height (measured in a standing position), and BMI (calculated using the formula weight in kilograms divided by height in meters squared, or kg/m²) were recorded. All patients were followed up until delivery, and obstetrical complications were documented.

Data was analyzed using SPSS software. Frequency and percentage were calculated for variables such as primigravida/multigravida status, pregnancy-induced hypertension, fetal distress, malposition, preterm labor, and oligohydramnios. Mean and standard deviation (±SD) were calculated for variables including age, parity, gestational age, height, weight, and BMI. A chi-square test was applied to compare obstetrical complications between primigravida and multigravida women, with a p-value of ≤0.05 considered statistically significant.

3. RESULTS

The age range of participants in the study was from 18 to 35 years, with a mean age of 28.048±2.70 years. The mean parity was 1.160±1.45, the mean gestational age was 28.967±1.96 weeks, the mean weight was 62.486±4.99 kg, the mean height was 1.595±0.06 meters, and the mean BMI was 24.680±2.95 kg/m², as shown in Table I.

Table-I. Demographics

Demographics	Mean±SD
Age (years)	28.048±2.70
Parity	1.160±1.45
Gestational age (weeks)	28.967±1.96
Weight (Kg)	62.486±4.99
Height (Kg)	1.595±0.06
BMI (Kg/m^2)	24.680±2.95

Table- II: Comparison of pregnancy induced hypertension, fetal distress comparison of malposition, preterm labor Comparison of Oligohydramniosin Primigravida and Multigravida.

		Primigravida	Multigravida	P Value
Pregnancy induced hypertension	Yes	48(16.8%)	24(11.6%)	0.107
	No	238(83.2%)	183(88.4%)	
	Total	286(100%)	207(100%)	
Comparison of fetal distress	Yes	37(12.9%)	16(7.7%)	0.065
	No	249(87.1%)	191(92.3%)	
	Total	286(100%)	207(100%)	
Comparison of Malposition	Yes	49(17.1%)	10(4.8%)	0.000
	No	237(82.9%)	197(95.2%)	
	Total	286(100%)	207(100%)	
Comparison of Oligo-hydramnios	Yes	20(7%)	27(13%)	0.024
	No	266(93%)	180(87%)	
	Total	286(100%)	207(100%)	

Pregnancy-induced hypertension was observed in 14.6% of patients, fetal distress in 10.8%, malposition in 12%, preterm labor

in 11%, and oligohydramnios in 9.5%. Among primigravida women, pregnancy-induced hypertension was 16.8%, compared to 11.6% in multigravida women (p=0.107). Fetal distress occurred in 12.9% of primigravida women and 7.7% of multigravida women (p=0.065). Malposition was observed in 17.1% of primigravida women and 4.8% of multigravida women (p=0.000). Preterm labor was seen in 17.5% of primigravida women and 1.9% of multigravida women (p=0.000). Oligohydramnios was present in 7% of primigravida women and 13% of multigravida women (p=0.024), as detailed in Table II.

4. DISCUSSION

In our study, most primiparous women (71%) were in the 18-30 year age group, while multiparous women were predominantly over 30 years old, which was statistically significant. Similarly, Kaur J et al. found that most primiparous females (52%) were aged between 21-25 years, and 35% of multiparous women were aged between 26-30 years, with these findings also being statistically significant. Additionally, in our study, 14.8% of both primiparous and multiparous women were illiterate, while 60% of both groups had education up to the high school level.

In this study, 53% of both primiparous and multiparous women had four antenatal visits, but the difference was not statistically significant. This finding contrasts with Kaur J et al.'s results, which showed that most primiparous women (67%) did not receive antenatal care. Additionally, 60% of primiparous and 45% of multiparous women took iron and folic acid supplements for 3-4 months, which was statistically significant. It is important for pregnant women to understand the benefits of iron supplements to prevent anemia, and alternative preparations, such as iron syrups, should also be made available.

In this study, a high proportion of primiparous (92%) and multiparous (76%) women received at least two doses of TT injections, with a statistically significant difference ($p<0.05$). These results are consistent with those of NFHS III in Assam, where 84% of primiparous and 65% of multiparous women received two doses of TT injections. The study found that preterm labor (17.5%), fetal distress (12.9%), and malposition (17.1%) were more common in primiparous women compared to multiparous women, who had rates of 11.6% for pregnancy-induced hypertension, 1.9% for preterm labor, 7.7% for fetal distress, and 4.8% for malposition. Similar but not identical results were reported by Kaur J et al., who found higher rates of preterm labor (9.6%), fetal distress (19%), and malposition (4.8%) in primiparous women compared to multiparous women, who had rates of 4.16% for preterm labor and 12.5% for fetal distress.

In a study by Baruah C, it was found that the frequency of pregnancy-induced hypertension (53%), fetal distress (23%), malposition (7.8%), preterm labor (6%), and oligohydramnios (5.8%) was higher in primigravida women compared to multigravida women, who had rates of pregnancy-induced hypertension (44%), fetal distress (9%), malposition (5.3%), preterm labor (2.5%), and oligohydramnios (1.3%).

All these conditions are obstetric emergencies that require prompt treatment. In this study, 60% of multiparous women were anemic, compared to 45% of primiparous women, though this difference was not statistically significant. In contrast, Kaur J et al. found that 25% of multiparous women were anemic compared to 23% of primiparous women, with no statistically significant difference. It is essential to focus

on screening for anemia, treating anemic women, and providing fortified food products to reduce anemia during pregnancy. In our study, the likelihood of a cesarean operation was 70% for primiparous women compared to 57% for multiparous women, with no statistically significant difference. Similarly, Kaur J et al. reported a cesarean section rate of 65% in primiparous women versus 40% in multiparous women, also with no significant difference.

5. CONCLUSION

The results of this study show that most females suffer from obstetric complications. To improve maternal health, it is crucial that females receive education and acquire knowledge about these complications so they can seek medical care to prevent severe outcomes in future pregnancies. Additionally, timely recognition and management of complications are essential.

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