

Evaluation of Outcomes of Pregnancy with Uterine Fibroids: A Clinic-Epidemiological StudyTabassum Ahmed¹, Suruchi Kumari², Vinita Kumari³, Kanaklata⁴¹Associate Professor, Department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital, Patna, Bihar, India²Senior Resident, Department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital, Patna, Bihar, India³Assistant professor, Department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital, Patna, Bihar, India⁴Senior Resident, Department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital, Patna, Bihar, India

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Conflict of interest: Nil

Abstract**Aim:** The aim of the present study was to assess the obstetrics outcomes of uterine fibroids and their consequences in a tertiary hospital.**Methods:** This study was an observational study conducted in the Department of Obstetrics and Gynaecology in NMCH for one year. The study was carried out for a duration of 12 months, from April 23 to March 24. A total of 200 pregnant women with ultrasound results of fibroid were included in this study.**Results:** The mean age of study patients was 31 years with standard deviation of 5.85, however 42% were 26-30 years old and 32% were 31-35 years old. 9% of patients were under 25 and 3% were over 40. 42% were primigravida, 38% were second or third gravida, and 20% were fourth gravida. Most patients (73%) had subserous fibroids and 18% had submucous fibroids. Fibroids were most prevalent in the fundus (74%), and 13% were pedunculated. 2-3 fibroids were seen in 47% of individuals. Most instances (80%) were delivered at term in this research. The most prevalent delivery method was cesarean section (62%), followed by vaginal (25%), including instrumental and aided breech. Threatened preterm labor (22%), abortion (17%), PPH (10%), and blood transfusion (21%), were the main pregnancy problems.**Conclusion:** Uterine fibroid pregnancy is often asymptomatic and accidental. Early pregnancy abortion, term pregnancy PROM, and postpartum PPH are linked to fibroids. Also, malpresentation is more likely. Pregnant uterine fibroid patients have significant cesarean section rates. So, uterine fibroids make a normal pregnancy high-risk.**Keywords:** neonatal outcome, postpartum hemorrhage, maternal complications, pregnancy complications, uterine fibroids

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Introduction

Leiomyomas are benign tumors that originate from the smooth muscle of the uterus. It is predominantly observed in women of reproductive age and accounts for around 20 to 50%. [1] It has been noted that the occurrence of fibroids tends to rise during pregnancy and is more likely to happen as women get older. The size of a fibroid is a crucial determinant of its growth during pregnancy. Typically, fibroids that are smaller than 5 cm have a tendency to shrink or stay the same size, whereas fibroids larger than 5 cm have the potential to increase in size. [2-5] The size of a fibroid is a crucial determinant, as it is linked to varying degrees

of danger and consequences. The problems include acute abdomen, cephalopelvic disproportion, antepartum hemorrhage (APH), preterm labor, malpresentation, postpartum hemorrhage (PPH), dysfunctional labor, intrauterine growth restriction (IUGR), and retained products of placenta. [6,7]

Uterine fibroids are often occurring noncancerous growths found in the female reproductive system. [8] The true extent of uterine fibroids is often underestimated due to the fact that a majority of cases do not exhibit any symptoms. [9] The incidence of uterine fibroids in pregnant women

varies from 1% to 10.7%. [10,11]. The occurrence of uterine fibroids during pregnancy is on the rise due to the trend of women postponing childbirth until later in life, coupled with the fact that the likelihood of developing uterine fibroids increases with age. [12] The precise understanding of the association between uterine fibroids and unfavorable obstetric outcomes is still lacking, despite the growing number of cases. Multiple studies have demonstrated a correlation between uterine fibroids and various pregnancy complications, including spontaneous abortion, placental abruption, antepartum hemorrhage, fetal malpresentation, preterm birth, premature rupture of membranes, dysfunctional labor, puerperal infection, an elevated likelihood of requiring a cesarean section, and postpartum hemorrhage. [13-15]

Objective

The objective of this study was to evaluate the obstetric outcomes and effects of uterine fibroids in a tertiary hospital.

Materials and Methods

The present study was an observational study was undertaken in the Department of Obstetrics and Gynaecology, Nalanda Medical College and Hospital, Patna, Bihar, India. The study was conducted over a period of 12 months. 200 pregnant women who had USG findings of fibroid were enrolled in this study.

This study included pregnant women who were identified with uterine fibroids using prenatal or antenatal ultrasonography (USG). The data, encompassing demographic information as well as antenatal and postdelivery details, was acquired

retrospectively from the patients' case files while ensuring the anonymity of the patients was not compromised. Exclusion criteria for this study were pregnant women with a history of cesarean section, any surgery of uterus, uterine deformity, or chronic illnesses such as hypertension and diabetes. The case record proforma consisted of demographic data, as well as information regarding the mother's antenatal, intrapartum, and postpartum history. This included details such as the mother's age, number of previous pregnancies, current pregnancy status, and the size and number of fibroids present. Additionally, the proforma included findings from clinical examinations, laboratory tests, and ultrasound scans. These scans provided information on fetal parameters, amniotic fluid levels, placental location, any changes in fibroid size, and any complications that may have arisen. Finally, the proforma documented the outcome of the case. Any obstetric complications such as preterm birth, premature rupture of membranes (PROM), malpresentation, placenta previa, placental abruption, low birth weight, as well as the method of delivery, and any morbidity or death associated with managing pregnancy with fibroids were recorded. Newborn outcomes, such as birth weight, APGAR score, newborn resuscitation, and admission to the neonatal intensive care unit (NICU), were recorded. Descriptive statistics were employed in the statistical analysis. Discrete variables were imported into Microsoft Excel (Redmond, WA, USA) and presented as numbers and percentages. Quantitative data was summarized using mean and standard deviation. Multiple logistic regression analysis was conducted to determine any association between perinatal outcome and fibroid characteristics.

Results

Table 1: Demographic data

Age (in years)	N	%
19 – 25	18	9
26 – 30	84	42
31 – 35	64	32
36 – 40	28	14
≥ 41	6	3
Gravida status		
Primigravida	84	42
Gravida 2-3	76	38
Gravida ≥ 4	40	20

The mean age of patients in study was 31 years with standard deviation of 5.85, but majority of patients (42%) were in the 26-30 years age group, and then in the 31-35 years age group (32%). 9% of patients were less than 25 years and 3% of patients were

more than 40 years of age. 42% of patients were primigravida and 38% of patients were of second or third gravida and 20% of patients were of fourth gravida.

Table 2: Features of uterine fibroid

Features of uterine fibroids	Number of cases	Percentage
Type of fibroid		
Intramural	20	10
Submucous	34	17
Subserous	146	73
Location of fibroid		
Cervix	12	6
Fundus	148	74
Tubes (cornual)	14	7
Pedunculated	26	13
Number of fibroids		
1	60	30
2-3	94	47
>=4	46	23

The majority of the patients had subserous fibroids (73%) and 18% of patients had submucous fibroids. The most common location of fibroid was the fundus region (74%) and 13% of patients had pedunculated fibroid. 47% of patients had two to three fibroids.

Table 3: Pregnancy outcomes

Pregnancy outcome	Number of cases	Percentage
Gestational age at termination of pregnancy		
≤ 20 weeks	8	4
21-32 weeks	6	3
33-37 weeks	26	13
37-40 weeks	148	74
≥ 40 weeks	12	6
Delivery mode		
Cesarean section	124	62
vaginal normal delivery	50	25
Instrumental delivery	8	4
Assisted Breech delivery	4	2
Hysterotomy	8	4
Suction and evacuation	6	3

In this study, the majority of cases were delivered at term (80%). The most common mode of delivery was cesarean section (62%), followed by vaginal delivery (25%), including instrumental and assisted breech delivery.

Table 4: Complications

Complications	Number of cases	Percentage
Threatened preterm labour	44	22
Blood transfusion	42	21
Postpartum hemorrhage	20	10
Antepartum bleeding	22	11
Threatened miscarriage	134	17
Admission for pain in abdomen	12	6
Laparotomy for abdominal pain	0	0

Major complications during pregnancy were threatened preterm labor (22%) and threatened abortion (17%), whereas PPH occurred in 10% of cases, and blood transfusion was required in 21% of cases.

Table 5: Fetal outcome

Fetal Outcome	Number of cases	Percentage
Abortion	12	6
Low birth weight	34	17
Low APGAR Score at 5 minutes	22	11
Required neonatal resuscitation	30	15
Required NICU admission	42	21
Neonatal death	4	2

Neonatal outcomes in our study were low birth weight (17%), low APGAR score at five minutes (11%), required neonatal resuscitation (15%) and required NICU hospitalization (21%), and neonatal mortality occurred in 2% of cases.

Discussion

Uterine leiomyoma is one of the most frequent benign tumors of the female reproductive system. It develops from the smooth muscle of the uterus. It affects 20-40% of women, although the estimated incidence during pregnancy is 0.1-3.9%. [16,17] The fact that uterine fibroid is linked to infertility and low implantation rates following in vitro fertilization (IVF) could explain the significantly lower prevalence in pregnancy. [18] The physical examination can only diagnose 42% of large fibroids (>5 cm) and 12.5% of smaller fibroids (3-5 cm). [19,20] Ultrasound's ability to detect fibroids in pregnancy is much lower (1.4-2.7%), owing to the difficulties in distinguishing fibroids from normal myometrial thickness. [20] Pregnancy with fibroid is associated with complications like antepartum hemorrhage (APH), acute abdomen, red degeneration of fibroid, laparotomy, preterm labor, malpresentation, and malposition of fetus, postpartum hemorrhage (PPH), retention of the placenta, dysfunctional labor and, intrauterine growth restriction (IUGR). [21-22]

The mean age of patients in study was 31 years with standard deviation of 5.85, was similar to other studies like Saleh et al [23] and Egbe et al. [24] This shows that uterine fibroids are more associated with advancing maternal age. But majority of patients (42%) were in the 26-30 years age group, and then in the 31-35 years age group (32%). 9% of patients were less than 25 years and 3% of patients were more than 40 years of age. 42% of patients were primigravida and 38% of patients were of second or third gravida and 20% of patients were of fourth gravida. The majority of the patients had subserous fibroids (73%) and 18% of patients had submucous fibroids. The most common location of fibroid was the fundus region (74%) and 13% of patients had pedunculated fibroid. 47% of patients had two to three fibroids. In this study, the majority of cases were delivered at term (80%). The most common mode of delivery was cesarean section (62%), followed by vaginal delivery (25%), including instrumental and assisted breech delivery. Caesarean delivery was seen more commonly in intramural group which was similar to the study done by Zhao et al. [25] However other studies like Saleh et al [23] showed no difference in rate of caesarean delivery between intramural and subserosal group. However, no difference was found in other obstetrics outcomes between the intramural and subserosal group.

The impact of USG-diagnosed multiple or big (≥ 5 cm) fibroids on obstetric outcomes was investigated

by Ciavattini et al. [20] The study included 219 women who had uterine fibroids. Women with numerous fibroids (n=34) had a significantly greater rate of preterm delivery, cesarean section, and breech presentation when compared to women without fibroids. Preterm birth and preterm premature rupture of membranes (PPROM) were more common in women with big fibroids (n=48). Multiple fibroids are linked to a higher risk of preterm birth and cesarean delivery, while large fibroids are linked to a higher risk of PPRM, according to their findings. In most cases, fibroids in pregnancy are treated conservatively. Pullemalla et al [26] studied 50 patients and observed that pregnant women with fibroid were at a higher risk of complications antenatally, intranatally, and also in the postpartum period. Pregnancy outcomes were abortion in two cases, delivery by cesarean section in 44 cases and four had normal deliveries. Thirty percent of patients had threatened miscarriage, and one case had PPH and needed a blood transfusion.

Neonatal outcomes in our study were low birth weight (17%), low APGAR score at five minutes (11%), required neonatal resuscitation (15%) and required NICU hospitalization (21%), and neonatal mortality occurred in 2% of cases. Zhao et al [27] conducted a multicenter investigation. In a study of 112,403 women, 3,012 (2.68%) were found to have at least one fibroid. Furthermore, the fibroid's location either intramural, submucosal or subserosal has a statistically significant impact on the probability of PPH (5.6% subserosal vs 4.7% submucosal vs 8.6% intramural). In a study by Sundermann et al [28], 4,622 pregnant women with a singleton pregnancy were evaluated and 475 of them had at least a single fibroid (10.3%). 352 pregnant women resulted in preterm birth (7.6%). On comparing the incidence of preterm and term birth, the prevalence of fibroid was similar in both groups (10.2% vs.10.3%). After considering the confounding factors, it was observed that preterm birth was not associated with uterine fibroid in pregnancy.

Conclusion

Pregnancies with uterine fibroids often do not show any symptoms and are typically discovered by chance. Fibroids during pregnancy can lead to miscarriage in the early stages of pregnancy, premature rupture of membranes at full term, and postpartum hemorrhage after giving birth. Additionally, there is a heightened susceptibility to malpresentation. Pregnant individuals with uterine fibroids have a high incidence of cesarean section. Therefore, the presence of uterine fibroids during pregnancy elevates the risk level of an otherwise normal pregnancy. Nevertheless, we observed no substantial correlation between the type, location, and quantity of fibroids and specific maternal problems. Therefore, it is imperative to closely

monitor patients with uterine fibroids during pregnancy and pay careful attention to both the mother and the fetus.

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