

Evaluate the Assessment of Correlation of Uterine Fibroids with Adverse Pregnancy Outcomes: A Prospective Study

Assessment of Correlation of Uterine Fibroids with Adverse Pregnancy

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ABSTRACT

Objective: To evaluate the assessment of pregnancy outcomes among women with uterine fibroids.

Study Design: A prospective observational study

Place and Duration of Study: This study was conducted at the Gynecology department of Nishtar Medical University & Hospital Multan from April 2020 to April 2021 for a period of one-year.

Materials and Methods: The study included pregnant women with uterine fibroids. Each woman underwent a detailed clinical check-up and routine laboratory testing at each hospital visit. Moreover, fetal health was also assessed regularly through ultrasonography. Parameters including maternal age, size and number of fibroids, obstetric complications, parity, and delivery mode were observed.

Results: A total of 60 pregnant women with uterine fibroids were included in the study. The participants had a mean age of 31.56 ± 4.3 years. Primigravida was reported in 25.03% of women while multigravida in 74.97%. 75% of women had spontaneous conception and 25% utilized different treatments for conception. Only 23.2% of women delivered through normal route and C-section was performed in 76.98% of women. 8% of women had a miscarriage, 12% had a postpartum hemorrhage, and only 3% had placenta previa associated antepartum bleeding. 15.4% had premature delivery while 75.2% completed the normal gestation period. Multiple fibroids and intramural location posed a high risk of C-section than single fibroids or sub-serosal fibroids.

Conclusion: Uterine fibroids can cause severe pregnancy outcomes. Therefore, it is advised to evaluate the complications regularly during the antenatal period and manage them effectively to avoid adverse obstetric outcomes.

Key Words: Uterine fibroids, obstetric outcomes, pregnancy

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INTRODUCTION

Uterine fibroids are one of the most prevalent benign tumors reported in the female reproductive system¹. However, the burden of the disease remains underestimated as the majority of fibroids are asymptomatic². The data suggest that 1% to 10.7% of pregnant women report the presence of uterine fibroids^{3,4} while the incidence rate is constantly on the rise due to delayed childbearing age⁵.

Despite the acknowledged increase in prevalence, the association between uterine fibroids and worse obstetric outcomes couldn't be established.

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The already established has reported the relation of uterine fibroids with many pregnancy complications including puerperal infection, dysfunctional labor, premature membrane rupture, preterm birth, fetal malpresentation, antepartum hemorrhage, placental abruption, spontaneous abortion, postpartum hemorrhage, and cesarean sections^{6,7,8}. The study, therefore, aimed to assess the pregnancy outcomes among women with uterine fibroids.

MATERIALS AND METHODS

A prospective observational study was conducted at the gynecology department of Nishtar Medical University & Hospital Multan for 1 year from 19th April 2020 to 19th April 2021. Women regularly visited the gynecology department and had ultrasonography (USG) confirmed uterine fibroids were consecutively enrolled in the study. Keeping 95% confidence interval and 80% power of the study, 60 patients were included in the study. The women with previous caesarian section, prior surgery, chronic diseases such as hypertension and diabetes, and those with uterine malformation were excluded from the study. All participants were informed

of the study's objectives and consent was obtained. Ethical approval was sought from the ethical committee of the hospital.

Patients' data registry was assessed to obtain their history whereas data acquired from clinical examination and diagnostic investigations were recorded side-by-side. Fibroids were diagnosed in the scan of 1st-trimester. Ultrasonography was performed at successive visits to assess fetal health and variation in size of fibroid or any related complication. The following variables were analyzed during the study: maternal age, parity, gravidity, gestational age, size and number of fibroids, and obstetric complications.

SPSS (version 18.0) was used for statistical analysis. Quantitative data were presented as mean along with standard deviation whereas qualitative as frequency and percentages. Chi-square and student's t-test were used for comparison of sub-classes of quantitative and qualitative study data, respectively. P-value<0.05 was considered statistically significant.

RESULTS

A total of 60 pregnant women with uterine fibroids were enrolled in the study. The enrolled women had a mean age of 31.56±4.3. 35 (58.3%) women were reported to have single fibroids while multiple fibroids were found in 25 (41.6%) women. 49 (81.6%) women had intramural fibroids while sub serosal were found in 19 (31.6%) women. 15 (25.03%) women were Primigravida and 45 (74.97%) were multigravid. 45 (75%) women reported having spontaneous conception while the remaining 15 patients acquired medical assistance for fertility (Table 1).

Table (2) presents the observed obstetrics outcomes among evaluated women. 6 (10%) had threatened abortion, 5 (8%) had a miscarriage, 9(15.4%) had a preterm abortion, 2 (3%) had an antepartum hemorrhage. The majority of women had full-term delivery (92%) whereas 46 (76.98%) had to undergo a caesarian section. Post-partum hemorrhage was reported in 7 (12%) women.

Table (3) shows the association between obstetric outcomes and fibroid number. The route of delivery was significantly different between the women with a single fibroid compared to the one with multiple fibroids. 8 (13.3%) women with single fibroids had a vaginal route of delivery while only 1 (1.6%) with multiple fibroids (p=0.02). Whereas, 27 out of 35 patients with single fibroids had cesarian section compared to those with 24 out of 25 multiple fibroids patients (p=0.01). There was no significant difference between the two sub-classes in terms of other complications (Table 3).

Table IV shows the association between obstetric outcomes and fibroid location. Similar to the association with fibroid number, fibroid location significantly affects the route of delivery.

Table No.1: Clinical characteristics of patients

Variables	Data
Age, years (mean ± SD)	31.56±4.3
Gravidity (N, %)	
Primigravida	15 (25.03%)
Multigravida	45 (74.97%)
Spontaneous conception	45(75%)
Assisted conception	15 (25%)

Table No.2: Obstetric outcomes among patients

Outcomes	Data (N, %)
Threatened abortion	6 (10%)
Miscarriage	5 (8%)
Preterm delivery	9(15.4%)
Antepartum hemorrhage	2 (3%)
Abruption	3 (4.2)
Placenta Previa	2 (3%)
Full-term delivery	51 (92%)
Vaginal delivery	14 (23.2%)
Cesarean delivery	46 (76.98%)
Postpartum hemorrhage	7 (12%)

Table No.3: Association between obstetric outcomes and fibroid number

Variables	Single fibroid (n=35)	Multiple fibroids (n=25)	p-value
Placental distortion	2(3.33 %)	4 (6.66%)	.73
Placenta previa	-	2 (3.33%)	.23
Preterm delivery	4 (6.66%)	5 (8.33%)	.51
Vaginal delivery	8 (13.3%)	1 (1.66%)	.02
Cesarean delivery	27 (77.1%)	24 (40%)	.01
Postpartum hemorrhage	3 (5%)	4 (6.66%)	.8

Table No.4: Association between obstetric outcomes and fibroid location

Variables	Subserosal fibroid(s) (n=19)	Intramural fibroid (s) (n=49)	p-value
Placental distortion	2 (3.33%)	3 (5%)	.89
Placenta previa	-	2 (3.33%)	.3
Preterm delivery	3 (5%)	6 (10%)	.52
Vaginal delivery	11 (18.3%)	3 (5%)	.004
Cesarean delivery	8 (13.3%)	46 (76.6%)	.001
Postpartum hemorrhage	3 (5%)	4 (6.6%)	.9

Majority of women with sub serosal fibroids (18.3%) delivered through the vaginal route compared to women with intramural fibroids (5%) ($p=0.04\%$). Consequently, the majority of the later class went through the cesarian section (76.6%). Whereas, no significant difference was found in terms of the incidence of other complications between the two groups (Table 4).

DISCUSSION

The study aimed to evaluate the obstetric outcomes of uterine fibroids. The enrolled women had a mean age of 31.56 ± 4.3 , similar to the ones reported in earlier studies such as by Egbe et al⁹ and Saleh et al². This indicates the higher association of uterine fibroids with advancing gestation age. Similarly, increased gravidity and incidence of fibroids are found to be correlated in our study which is supported by findings of Sheiner et al¹⁰ and Saleh et al². Our study reported that 12% of women had postpartum hemorrhage (PPH). A closely similar incidence of postpartum hemorrhage (PPH) in women with uterine fibroids was observed by Parazzini et al¹¹ and Febo et al¹². However, few studies have reported contradictory results and found no relation between uterine fibroids and risk of postpartum hemorrhage such as the study by Coronado et al¹³.

In our study, it was found out that uterine fibroids impede the normal mode of delivery (vaginal route). In compliance with this, Qidwai et al⁷ and Stouts et al⁶ also reported a higher CS rate in pregnant women with uterine fibroids. However, contradictory results, where no association between fibroids and CS was found, are also established in the literature¹⁴.

We also established an association between several fibroids and obstetric complications. It was found that several fibroids increase the risk of caesarian delivery. Similar results were found by Qidwai et al⁷; however, despite the increased incidence of CS in women with more fibroids, the enhanced risk was not statistically significant. However, Lam et al¹⁵ and Ciavattini et al¹⁶ have observed a significant association between CS and preterm delivery. CS delivery was also significantly associated with intramural fibroid location as found by Zhao et al²¹. However, contrary results were found. The study was found to be limited in terms of study size, limited postpartum follow-up, and lack of control group comparison.

CONCLUSION

Uterine fibroids can cause severe pregnancy outcomes. Therefore, it is advised to evaluate the complications regularly during the antenatal period and manage them effectively to avoid adverse obstetric outcomes.

Author's Contribution:

Concept & Design of Study:	Nadia Taj
Drafting:	Afshan Mehvish
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Revisiting Critically:	Nadia Taj, Sadia Zafar
Final Approval of version:	Sadia Zafar

Conflict of Interest: The study has no conflict of interest to declare by any author.

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