

Uterine Fibroids of Women of Reproductive Age Group: The Health and Ecological Analysis

Rama Das¹, Nirmalya Kumar Sinha², Pallabi Bagchi³ and Sankar Kumar Acharya⁴

^{1,3}Dept. of Food & Nutrition Barrackpore Rastraguru Surendranath College Barrackpore, West Bengal, India

²Dept. of Nutrition Raja N.L Khan Women's College, Midnapore, West Bengal, India

⁴Dept. of Agricultural Extension Bidhan Chandra Krishi Viswavidyalaya Kalyani, West Bengal, India

E-mail: ¹ramadasbpd@gmail.com, ²nksinhakgp@gmail.com, ³pallabibagchi933@gmail.com, ⁴acharya09sankar@gmail.com

Abstract

Background and objectives: Uterine fibroids are very common non-cancerous (benign) growths that develop in the muscular wall of the uterus.

Objectives: The objective of the study is to find the prevalence of different lifestyle diseases related to uterine fibroid.

Methods: A hospital based study was carried out in Medical College, Kolkata. Sixty patients suffering from uterine fibroid were randomly selected for this study. The anthropometric measurements like body weight, height, midupper arm circumference (MUAC), waist circumference (WC) and hip circumference (HC) of the participants were measured and body mass index (BMI) and waist hip ratio (WHR) was computed. Systolic and diastolic blood pressure was measured by using sphygmomanometer and pulse rate was measured manually. Blood haemoglobin level of the participants was determined. The report of the ultrasound sonography test (USG) was collected to diagnose uterine fibroids and the information about history of the disease was also collected from the participants. We categorized the participants by the months of suffering viz. ≤ 10 months and > 10 months. Statistical analysis was done using SPSS 17. Student-'t' test were performed for continuous variables and Pearson's χ^2 test for categorical-variables.

Results: The study reveals that there is significant increase of BMI value ($P < 0.05$) ($BMI = 26.00 \pm 2.98$) among those suffering from UT more than 10 months. Mean of systolic and diastolic BP were 122.05 ± 12.19 mmHg and 78.39 ± 5.85 mmHg respectively. Weight (63.19 ± 7.39) is significantly height and obesity also found among woman suffering for more than 10 months. There is increased rate of presence of high BP or hypertension among those suffering from UT more than 10 months than those who have developed UT for less than 10 months. no significant ($P > 0.05$) change in the duration wise variation of UT in with diabetes is found. Weight is significantly higher among those suffering from UT for more than 10 months. In this study prevalence of anaemia also found to be higher among those suffering from UT for more than 10 months. ($\chi^2 = 3.74; P = 0.05$).

Keywords: Diabetes, hypertension; diabetes; obesity; uterine fibroids.

1. INTRODUCTION

Twenty to forty percent of women age thirty five and older have uterine fibroids of a significant size. African American women are at a higher risk for fibroids: as many as 50 percent have fibroids of a significant size. Uterine fibroids are the most frequent indication for hysterectomy in premenopausal women and, therefore, are a major public health issue. Of the 600,000 hysterectomies performed annually in the United States, one-third are due to fibroids.

Although the cause is unknown, research shows there are several key risk factors for developing uterine fibroids.

Because fibroids are estrogen-dependent tumors, they're most common in premenopausal women in their 30s and 40s. After menopause, when estrogen levels naturally decrease, fibroids generally shrink or disappear

If a woman's mother or sister has fibroids, she's at increased risk of developing them herself. In fact, a woman whose mother has fibroids has three times the risk of developing them. : Black women are more likely to have fibroids than white women. In addition, black women tend to develop fibroids at a younger age, have more or larger tumors, and develop symptoms faster and with more severity than women in other ethnic groups. Studies have suggested that eight in 10 black women will develop fibroids at some point in their lives

Obese women are considered to have two to three times the risk of developing fibroids than women of average weight

Research has suggested a relationship may exist between diet and the growth of uterine fibroids. More than a decade ago, a study by Chiaffarino and colleagues published in *Obstetrics & Gynecology* reported that uterine fibroids were associated with the consumption of ham and beef. The study indicated that a high intake of green vegetables has a protective effect against fibroids.

2. MATERIALS AND METHODS

STUDY NATURE Descriptive type of study.

Study design

Cross sectional in design.

Place of study

Location- Kolkata & North 24 pgs

Duration of study

6 months.

Human subjects under study:

Female population suffering from uterus tumor.

Inclusion criteria:

The female population suffering from uterus tumor and living in kolkata & north 24 pgs are included in this study.

Exclusion criteria:

The prenat women are excluded from this study.

Sampling procedure

Samples were randomly selected.

Sample size:

60 patients.

Socio-economic profile

The socio-economic status of the individual was assessed by update Kuppaswami's socio-economic status scale. (Kumar et al.2012)

Anthropometric parameters

The anthropometric measurements like body weight, height, midupper arm circumference (MUAC), waist circumference (WC), hip circumference (HC), chest circumference (CC) and mid thigh circumference (MTC) of the participants were measured and body mass index (BMI) and waist hip ratio (WHR) was computed. Systolic (SBP) and diastolic blood pressure (DBP) was measured by using sphygmomanometer and pulse rate (PR) was measured manually. Blood haemoglobin level of the participants was determined. The report of the ultrasound sonography test (USG) was collected to diagnose uterine fibroids and the information about history of the disease was also collected from the participants. We categorized the participants by the months of suffering viz. ≤ 10 months and > 10 months. Statistical analysis was done using SPSS 17. Student-'t' test were performed for continuous variables and Pearson's χ^2 test for categorical-variables.

3. RESULTS & DISCUSSION

The mean of weight and height of the female in the study group were 62.19 ± 7.88 kg and 155.52 ± 5.23 cm respectively.

The mean of BMI of the studied women ranged between 25.70 ± 2.94 kg/m². Mean of MUAC, waist circumference, chest circumference were 28.21 ± 2.93 cm, 94.19 ± 9.11 cm and 102.74 ± 9.58 cm respectively among the study population and the mean of WHR was 0.92 ± 0.05 . Mean of systolic and diastolic BP were 122.05 ± 12.19 mmHg and 78.39 ± 5.85 mmHg respectively. (Table1).

Table 1: Anthropometric and physiological parameters of the participants

Parameters	Mean \pm SD	95% CI
Age(years)	41.9 \pm 6.02	40.33 – 43.47
Weight(kg)	62.19 \pm 7.88	60.13 – 64.24
Height (cm)	155.52 \pm 5.23	154.15 – 156.88
BMI(kg/m ²)	25.70 \pm 2.94	24.93 – 26.47
MUAC(cm)	28.21 \pm 2.93	27.45 – 28.97
WC (cm)	94.19 \pm 9.11	91.82 – 96.57
HC (cm)	102.74 \pm 9.58	100.25 – 105.24
WHR	0.92 \pm 0.05	0.91 – 0.93
SBP (mmHg)	122.05 \pm 12.19	118.88 – 125.23
DBP (mmHg)	78.39 \pm 5.85	76.87 – 79.91
PR beats/min	69.37 \pm 5.63	67.91 – 70.84

The health status of the women was determined by nutrient consumption. Mean energy intakes among the participants were 2043.57 ± 263.03 kcal/day. Mean intake of protein, fat, carbohydrate, calcium, P, Fe were 59.20 ± 21.28 gm, $41.85 - 51.26$ gm, 346.23 ± 62.98 gm, 478.24 ± 522.47 mg, 979 ± 413.05 mg, 42.73 ± 128.66 mg respectively. (Table2).

The anthropometric parameters like BMI are presented between two groups. There is significant increase of BMI value (P value $<$ 0.05) among those suffering from UT more than 10 months.(Table 3).

Prevalence of anaemia between two groups (women with UT for more than 10 months and with UT less than 10 month)(P value 0.05) are presented in this table .(Table4).

Physiological parameter like BP are presented in this table. There is increased rate of presence of high BP or hypertension among those suffering from UT more than 10 months than those who have developed UT for less than 10 months.(Table 5). This table shows no significant (P $>$ 0.05) change in the duration wise variation of UT in with diabetes.(Table 6).

Table 2: Nutrients intake of the participants

Parameters	Mean \pm SD	95% CI
Protein	59.20 \pm 21.28	53.65 – 64.74
Fat	46.55 \pm 18.06	41.85 – 51.26
Carbohydrate	346.23 \pm 62.98	329.82 – 362.64
Energy	2043.57 \pm 263.03	1975.02 – 2112.12
Calcium	478.24 \pm 522.47	342.09 – 614.40
Phosphorus	979 \pm 413.05	871.36 – 1086.64
Iron	42.73 \pm 128.66	9.20 – 76.26
Carotene	733.17 \pm 1035.76	463.25 – 1003.09
Thiamin	2.72 \pm 11.34	-0.23-5.91

Riboflavin	1.46±3.58	0.53-2.40
Niacin	15.07±5.01	13.76-16.37
Vit B6	25.23±130.29	-8.72-67.91
Folic acid	120.03±89.41	96.73-143.34
Vit C	98.03±152.21	58.36-137.70
Choline	391.43±377.78	292.98-489.88
Diatery fibre	26.81±41.68	15.94-37.67
Copper	2.76±4.55	1.58-3.95
Zinc	6.14±1.94	5.63-6.64
Vit B12	4.88±11.46	1.90-7.87

Table 3: Relation of duration of UT and BMI of the participants

Nutritional status	Duration of UT (years)		χ ²
	≤10 N=39	>10 N=20	
Obese	29	9	χ ² =4.12; P<0.05
Non obese	10	11	

In table 6 weight,height,BMI,MUAC,waist and hip circumference, Waist to hip ratio, Calf circumference are significantly defined between two groups.Weight is significantly higher among those suffering from UT for more than 10 months.

Table 4: Relation of duration of UT and presence of anaemia

Anaemia	Duration of UT (years)		χ ²
	≤10 N=39	>10 N=20	
Present	19	15	χ ² =3.74; P<0.05
Absent	20	5	

Table 5: Relation of duration of UT and presence of high BP

Hypertension	Duration of UT (years)		χ ²
	≤10 N=39	>10 N=20	
Present	16	15	χ ² =6.12; P<0.01
Absent	23	5	

Table 6: Duration of suffering (months) from UT and anthropometric parameters

Anthropometric parameters	≤10	>10	t test
Weight(kg)	63.19±7.39	58.70±7.03	2.244*
Height(cm)	155.92±4.09	154.74±7.02	0.820
BMI(kg/m ²)	26.00±2.98	24.29±3.16	2.048*
MUAC(cm)	28.45±2.81	27.74±3.18	0.881
WC (cm)	93.46±9.84	94.30±8.95	2.285*
HC (cm)	100.13±11.22	104.09±8.48	1.520*
WHR	0.91±0.03	0.94±0.07	2.535*
MTC (cm)	44.85±4.01	44.80±4.80	0.043
CC (cm)	33.42±2.90	32.88±3.66	0.625

SBP	119.90±7.16	126.85±17.76	2.142*
DBP	77.72±5.20	79.70±6.90	1.238*
PR	69.67±5.67	68.80±5.65	0.557
Significance level at *P<0.05			

4. CONCLUSIONS

The present study indicates that the lifestyle diseases like obesity, hypertension, diabetes etc. are more likely to occur among women suffering from uterine fibroid for longer period of time. The research also evinces that the respondents having higher BMI and higher level of anemia, are also vulnerable to uterine fibroids. So, better dietary management, and higher health care, both with diagnostic and clinical intervention, can provide a better remedial as well as protective measures both to the victims as well as to those who are prone to become a victim.

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