IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 18, Issue 2 Ser. 13 (February. 2019), PP 38-48
www.iosrjournals.org

Clinical Profile and Epidemiology of Fibroid in Women in Tertiary Care Centre

Aruna Reddy G[1], Anitha H[2], Madhuri. K[3]
Associate Professor, Department of Obstetrics & Gynaecology, Govt.Medical College, Siddipet
Assistant Professor, Department of Obstetrics & Gynaecology, Gandhi Medical College, Hyderabad
Post Graduate, Department of Obstetrics & Gynaecology, Gandhi Medical College, Hyderabad

Abstract:
Background: *Leiomyoma of the uterus is a benign tumor, essentially composed of smooth muscle tissue and varying amount of fibrous connective tissue. It is commonly found in uterus but can occur in oesophagus, bladder and intestines also. It is a monoclonal tumor. It is the most common tumor of uterus and is found in 20% of women in reproductive age group.*
Symptomatic fibroids have become so common and are the leading cause for 60% of hysterectomies performed. Despite being so common, the causative factors for fibroid remain obscure. Much research is being carried out on the causative factors for fibroids. It has been found out that genetic factors and hormonal factors along with certain environmental factors are implicated in causation of fibroids.
The factors implicated in fibroid formation could be Environmental factors, Hormonal factors and Genetic factors.
Aim Of The Study:
1. *To correlate the epidemiological factors with the occurrence of leiomyoma*
2. *To study the clinical profile of symptomatic leiomyoma.*

Objective Of The Study: *To study the environmental, dietary, familial and epidemiological factors and correlate with the occurrence of leiomyoma.*
To analyse the varied clinical presentation and to study the effect of various parameters in the occurrence of leiomyomas.
To study the epidemiological feature in 100 controls and to correlate with patients having leiomyoma.
Methods:
Source of Data*: Reproductive age women with symptomatic fibroid uterus who came to gynaec OPD in Gandhi Hospital, Secunderabad.*
Study Design*: Observational case control study*
Duration of Study *– One and half years, from 2016 December to 2018 June*
Sample size *– 100 cases and 100 controls*
Inclusion Criteria –
a. *Patients with leiomyomas of uterus and cervix*
b. *Patients with clinical symptoms caused by fibroids*
c. *100 cases without leiomyoma for comparison*

Exclusion Criteria –
a. *Pregnant women*
b. *Post menopausal women*

Summary: *The present study is an observational case control study.100 cases and 100 controls were included. This study is carried out with an aim to determine the factors associated with the occurrence of fibroids. Detailed history and data regarding age, socio-economic status, parity, abortions, occupation, age at menarche, chief complaints, family history, diet, caffeine intake, smoking, alcohol, OCpills, HRT, storage of water in plastic containers, insecticide usage is taken. Associated co-morbidities like HTN, DM, Hypothyroidism is taken note of. Detailed clinical examination is done and appropriate investigations are carried out.*
Results: *Among the cases, 38% are in overweight group and 16% in the obese group. There is family history of fibroids in 15% of cases. Among the cases,87% consume non-veg food,56% lead a sedentary lifestyle,23% give a history of secondary smoking.8% consume alcohol and 28% are exposed to insecticides.3% give a history of OCP usage.16% give history of storage of water in plastic containers. Among the cases 15% are found to have HTN,6% have both HTN and DM,6% have hypothyroidism. After comparing with the age matched control population, it is found that obesity, non veg diet, family history, insecticide exposure, storage of water in plastics are found to increase the incidence of fibroids. Alcohol consumption, OC pill usage, associated comorbidities like HTN and DM do not have any association with fibroids. Secondary smoking and exercise is found to decrease the incidence of fibroids.*

Conclusion: *Uterine leiomyoma is one of the most common tumor arising from the muscular layer of the body of uterus. About 50% patients are symptomatic. Symptoms include menorrhagia, dysmenorrhea, abdominal pain and urinary symptoms which result in significant compromise in the quality of life. Despite being so common, the causative factors for fibroids remain obscure. It has been found out that genetic factors and hormonal factors along with certain environmental factors are implicated in causation of fibroids. The present study is carried out to find the causative factors for fibroids. In the present study obesity, non-veg diet, insecticide exposure, storage of water in plastics is found to increase the incidence of fibroids.*

Date of Submission: 11-02-2019 Date of acceptance: 28-02-2019

I. Introduction

Leiomyoma of the uterus is a benign tumor, essentially composed of smooth muscle tissue and varying amount of fibrous connective tissue. It is commonly found in uterus but can occur in oesophagus, bladder and intestines also. It is a monoclonal tumor. It is the most common tumor of uterus and is found in 20% of women in reproductive age group[1].

Leiomyomas are the reason behind 1/3rd of all hospital admissions to gynaecology services and one of the commonest indication for hysterectomy[2]. The prevalence ranges between 5 – 77% depending on the population study and the method of diagnosis[3]. It is found that the incidence is high among black women when compared to their age controlled white population. The incidence of fibroids is highest in African countries and least among the European population[5].

Fibroids are symptomatic in 50% of cases with the peak incidence of symptoms occurring among women in their thirties and forties. Symptoms include menstrual disturbances commonly menorrhagia, dysmenorrhoea, pressure symptoms such as increased urinary frequency, pelvic pain and constipation and they may interfere with reproduction by causing subfertility or preterm births. Sometimes fibroids may cause life threatening anemia because of Abnormal Uterine Bleeding (AUB). Most of the symptomatic fibroid patients seek medical help. Surgical options were those only available for these patients a decade ago. Over the past ten years, several other options such as medical management with mifiprestone, ullipristal, LNG – IUS, endometrial ablation using cryo or laser, uterine artery embolization became available.

Symptomatic fibroids have become so common and are the leading cause for 60% of hysterectomies performed. Despite being so common, the causative factors for fibroid remain obscure. Much research is being carried out on the causative factors for fibroids. It has been found out that genetic factors and hormonal factors along with certain environmental factors are implicated in causation of fibroids.

Environmental factors implicated in fibroid formation –

Non veg diet, alcohol consumption, sedentary life style, hormone replacement therapy, storage of water in plastic containers, insecticides exposure, nulliparity, co-morbidities like HTN, DM, caffine intake, secondary smoking, talc usage, OC pill usage, HRT usage and stress.

Hormonal Factors Implicated In Fibroid Formation:

Estrogen has been traditionally proposed as the primary promoter of uterine leiomyoma growth. As noted by Rein, however, distinguishing the relative importance of estrogen vs progesterone is difficult, as progesterone levels are significantly elevated during the reproductive years and are suppressed after menopause.

Genetic Factors Implicated In Fibroid Formation –

40% of fibroids are associated with chromosomal translocations and genomic instability[4]. Cytogenetic abberations, involving chromosomes 6, 7, 12, 14 constitute the major chromosomal abnormalities seen in leiomyomata.

Multiple chromosomal abnormalities are detected in approximately 50% of leiomyoma by cytogenetic analysis, the most common being t (12;14) translocation between long arms of chromosomes 12 – 14 (which is present in 20% of karyotypically abnormal fibroids) followed by deletion on the long arm of chromosome 7.

Leiomyoma – Associated Cytogenetic Changes

Chromosomal Abberation	Frequency	Reference
t (12;14)	20%	Lignon & Morton et al 2000[6]
del (7)	17%	Lignon & Morton et al 2000[6]
trisomy 12	12%	Nilbert & Heim 1990[7]
6 p 12 (del, inv, t)	< 5%	Lignon & Morton et al 2000[6]

The present work is being carried out to study the epidemiological background of patients with symptomatic fibroids and to find correlation with environmental, familial, dietary and other factors and to study the clinical profile and understand the varied presentation and hormonal background of leiomyoma.

II. Methods

This observational prospective study was carried out from 2016 December to 2018 June in the department of obstetrics & gynaecology, Gandhi Medical College/Hospital.

Informed consent was taken from all the patients before including them in the study. Prior to that, all of them were informed that they were being included in this study. It was explained in their own language the details of the history that will be elicited from them, including socio demographic profile, detailed menstrual history, history of present illness, medical illness, personal and family history. Investigations that would be done including hematological investigations, non invasive tests like ultrasound, invasive tests like endometrial biopsy are explained to the patient.

Detailed history was taken regarding the sociodemographic profile including age, parity,abortions, socio economic status, occupation, age at menarche, chief complaits, family history, Diet, Caffine intake, smoking, alcohol, OC Pills, hormone replacement therapy, storage of water in plastic containers, insecticide exposure. Medical problems like hypertension and diabetes, hypothyroidism, bowel and bladder habits, family history of fibroids, breast or genital malignancies was taken note of.

All the patients were evaluated by a thorough general examination. The height and weight was measured and BMI is calculated. General health was evaluated by the presence, absence, and degree of Pallor, icterus, cyanosis, clubbing, generalized lympadenopathy and pedal adema. Vitals were checked. CVS, respiratory system, CNS, GIT were examined. Detailed gynaecological examination by per abdominal examination, per speculum and bimanual examination were done to evaluate the uterus and adnexa.

Heamatological investigations including complete blood picture, random blood sugar, blood urea, serum creatinine, thyroid profile and coagulation profile. Ultrasound scan was done transabdominally Ultrasound scan was done transabdominally with Esaote My lab machine using 5 MHz probe to look for the uterine volume, fibroid volume, type of fibroid, endometrial thickness and any other adnexal pathology. If the endometrial thickness was found to be ≥8mm in USG, endometrial biopsy was done and the sample sent for histopathological examination to look for any hyperplasia, atypia or malignancy.

Viscosmi formula was used for the measurement of uterine volume that is $4/3\pi \times W/2 \times L/2 \times T/2$ where W is uterine width on transverse section passing through the uterine fundus, L is the uterine length measured on sagittal section from the internal os to the fundus, T is the uterine thickness measured on sagittal section between the anterior and posterior walls.

The patients were followed up and appropriate treatment decided after individualizing each case. The details of treatment given were noted. The relation between the various socio demographic factors with the causation of fibroids observed. P value and Odd's ratio calculated for each factor.

Statistical Analysis Methods

All the data obtained was analysed statistically using the Paired t test. P value was calculated to determine the association between the proposed risk factor and fibroid. The statistical significance level was fixed at $P < 0.05$.

Figure No 1: Pictorial Blood Loss Assessment Chart

Pictorial Blood Loss Assessment Chart

DAY	DAY1	DAY2	DAY3	DAY4	DAY5	DAY6	DAY7	DAY8	DAY9	DAY10	TOTAL TALLIES	MULTIPLYING FACTOR	ROW TOTAL
												X1	
												X5	
												X20	
												X1	
												X5	
												X10	
Small blood clots (= Dime)												X1	
Large blood clots (≥ Quarter)												X5	
Menstrual accidents												X5	
Total Score (Sum of rows)													

How to use the Pictorial Blood Assessment Chart:

- Record the number of tampons and sanitary pads used each day during your period by placing a tally mark under the day next to the box representing the amount of bleeding noted each time you change your pads or tampon (see example at right)
- Record clots by indicating whether they are the size of a dime or a quarter coin in the small and in the large blood clot row under the relevant day.
- Record any incidences of flooding (accidents) by placing a tally mark in the menstrual accident row.

Scoring the Chart:
At the end of your period tabulate a "**Total Score**" by multiplying the total number of tallies in each row by the "**Multiplying Factor**" at the end of the row. Then sum the "**Row Totals**" to obtain the final "**Total Score**"

Example:
Ms. Smith in the first day of her period, she used 7 pads (5 lightly stained, 1 moderately and 1 heavy stained). She also used 1 moderately stained tampon and had 3 blood clots 1 small and 2 large. She also had one incidence of flooding.

Days	D1	D2	D3	D4
	IIII			
	I			
	I			
	I			
Small blood clots (= Dime)	I			
Large blood clots (≥ Quarter)	II			
Menstrual accidents	I			
Total Score				

Figure No 2: Visual Analogue Scale

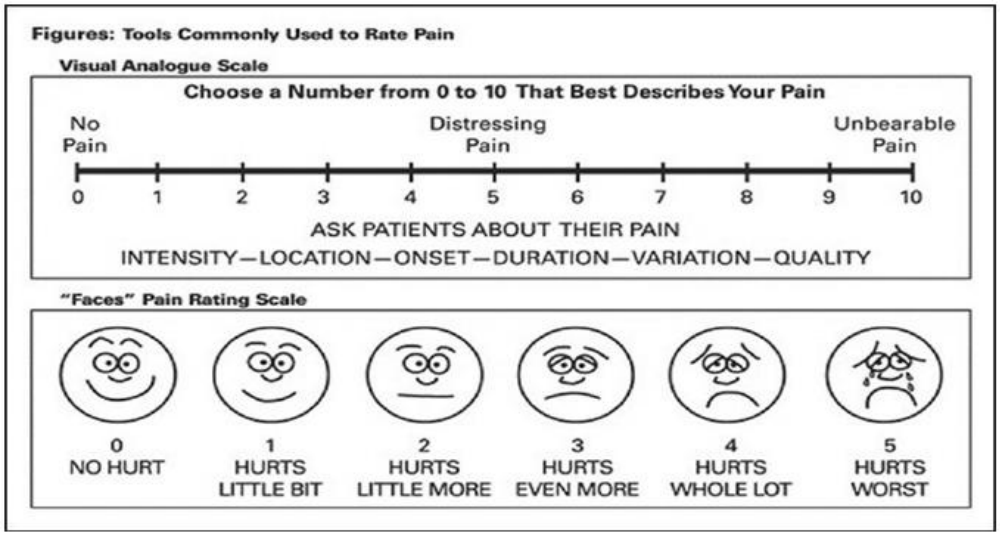

Figure No. 3 Measurement Of Endometrial Thickness In Ultra Sound

Figure No. 4: Measurement Of Uterine Volume

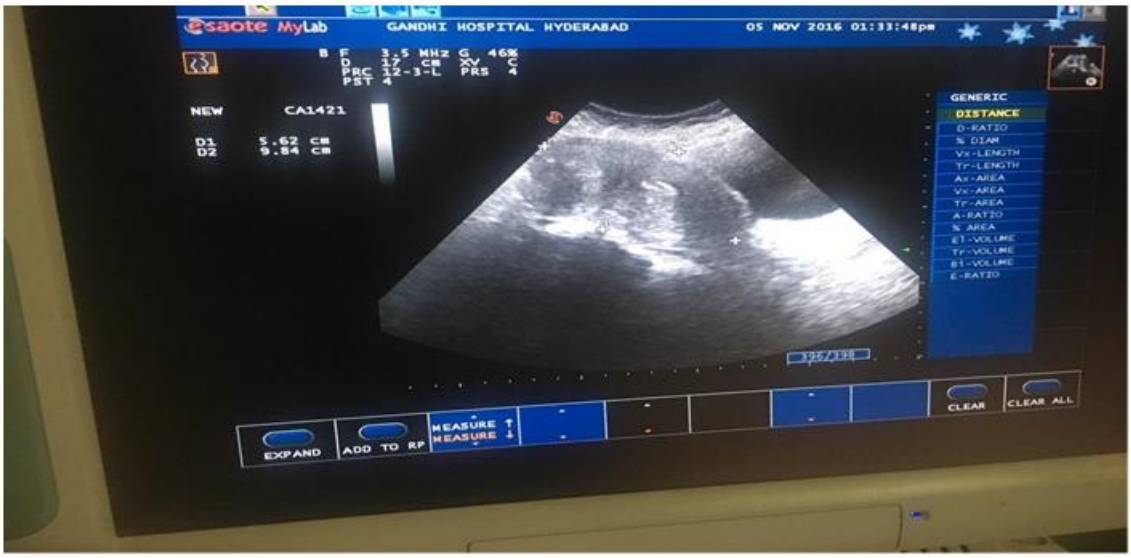

Figure No. 5: Measurement Of Fibroid Volume In Usg

III. Observation And Results

Table 1: Age Wise Distribution Among Cases And Controls

Age groups (years)	Cases (n=100)	Controls (n=100)	Total
21-30	08	03	11
31-40	33	28	61
41-50	50	52	102
51-60	09	17	26
Mean	41.95±6.81	44.02±6.19	

Among 100 patients, 50% are between 41 to 50 years.

Table 2: Distribution According To Parity Among Cases And Controls

Parity	Cases (n=100)	Controls (n=100)
0	08	03
1	17	23
2	46	53
3	25	20
4	04	01

Majority of patients were parous in the present study, among them para 2 was most common which is 46%. Only 8% were nulliparous.

Table 3: Distribution According To Abortions Among Cases And Controls

Abortions	Cases (n=100)	Controls (n=100)	Total
0	86	82	168
1	13	13	26
2	01	05	06

Table 4: Socio Economic Status Among Cases And Controls

Socio economic status	Cases (n=100)	Controls (n=100)
Upper class	01	--
Upper middle	21	12
Middle	61	74
Lower	17	14

Majority of women were in the middle class group which was 61% followed by the upper middle 21%, lower 17% and upper 1%.

Table 5: Distribution According To Occupation Among Cases And Controls

Occupation	Cases (n=100)	Controls (n=100)
House wife	57	62
Agri/daily labourer	23	31
Office employee	18	07
Professional	02	--

Among 100 patients 57% are housewives which constitute the majority. 23% are labourers, 18% office employees, 2% professionals. When compared with the controls it is found that more no of labourers and less no of office employees were present in the control group.

Table 6: Age At Menarche Among Cases And Controls

Age at Menarche	Cases (n=100)	Controls (n=100)
< 10 years	03	05
11 – 15 years	92	90
>15 years	05	05

In the present study, the age at menarche in majority of cases (92%) in between 11 – 15 years compared to 90% in controls.

Table 7: Chief Complaints Among Cases

Chief complaints	Number	Percentage
Asymptomatic	01	1%
Abnormal uterine bleeding	75	75%
Pain abdomen	17	17%
Urinary symptoms	07	7%
Bladder symptoms	05	5%
Total	100	100%

Out of 100 cases majority of women presented with the compliant of abnormal uterine bleeding followed by pain abdomen 17%. Only 1% of the cases are asymptomatic.

Table 8: Distribution According To Bmi Among Cases And Controls

Body Mass Index (BMI) ($kg/m^{2)}$	Cases (n=100)	Controls (n=100)
< 18	--	04
19 – 25	46	76
26 – 30	38	19
31 – 35	16	01

Among 100 cases 38% are in the overweight group and 16% in the obese group. When compared with the controls 19% are in overweight and 1% in the obese.

Table 9: Distribution According To Family History Among Cases And Controls

Family history	Cases (n=100)	Controls (n=100)
Yes	15	02
No	85	98

There is family history of fibroids in 15% of cases whereas in controls it is only 2%.

Table 10: Distribution According To Diet Among Cases And Controls

Diet	Cases (n=100)	Controls (n=100)
Vegetarian	13	36
Mixed	87	64

Among the cases, 87% consume non vegetarian food, whereas in controls only 64% consume it.

Table 11: Distribution According To Exercise Among Cases And Controls

Exercise	Cases (n=100)	Controls (n=100)
Sedentary	56	41
Moderate	32	43
Heavy	12	16

Among 100 cases majority (56%) are having a sedentary lifestyle.

Table 12: Distribution According To Secondary Smoking Among Cases And Controls

Secondary Smoking	Cases (n=100)	Controls (n=100)
Yes	23	38
No	77	62

Among 100 cases only 23% give a history of secondary smoking when compared to 38% in controls.

Table 13: Distribution According To Alcohol Among Cases And Controls

Alcohol	Cases (n=100)	Controls (n=100)
Yes	08	11
No	92	89

Among 100 cases only 8 cases consume alcohol compared to controls where the no is 11.

Table 14: Distribution According To Insecticide Exposure Among Cases And Controls

Insecticide Exposure	Cases (n=100)	Controls (n=100)
Yes	28	05
No	72	95

Among 100 cases 28% are exposed to insecticides when compared to 5% in controls.

Table 15: Distribution According To Co Morbidities Among Cases And Controls

Co morbidities	Cases (n=100)	Controls (n=100)
Nil	66	78
Hypertension	15	12
Diabetes	07	02
Both	06	01
Hypothyroidism	06	07

Table 16: Distribution According To Oc Pills Among Cases And Controls

OC Pills	Cases (n=100)	Controls (n=100)
Yes	03	5
No	97	95

In the present study only 3 cases and 5 controls give a history of OC pill usage. No association could be made between OCP usage and fibroid occurrence.

Table 17: Distribution According To Storage Of Water In Plastics Among Cases And Controls

Storage of water in plastics	Cases (n=100)	Controls (n=100)
Yes	16	06
No	84	94

Table 18: Clinical Features Among Cases

Clinical features	Number	Percentage
Uterus normal size	39	39%
Uterus 6-8 weeks	24	24%
Uterus 10-12 weeks	13	13%
Uterus 14-18 weeks	10	10%
Uterus >18 weeks	14	14%

Table 19: Treatment Among Cases

Treatment	Number	Percentage
Mifepristone	07	7%
Mirena	21	21%
Myomectomy	11	11%
Abdominal hysterectomy	60	60%
Vaginal hysterectomy	--	--
Lap. hysterectomy	01	1%

IV. Discussion:

Leiomyoma of uterus forms the most common type of benign tumor of uterus and also the most common pelvic tumor in women. The symptomatology continues to be variable. Surgery has for long been the main mode of therapy. Recent trend has been towards non surgical approaches like GnRH hormone analogs, RU486, selective uterine artery embolization, laparoscopic cryoablation, radiofrequency thermal ablation. Despite being so common the positive factors associated with the occurrence of fibroids remain obscure. The

present study correlates the environmental, dietary, familial and epidemiological factors to the occurrence of leiomyoma.

During the reproductive years, the risk of myoma development increases with age. Myomas do not grow before puberty and after menopause. The apparent increase in the late reproductive years may be due to cumulative stimulation of estrogen and progesterone for 20 – 30 years. In the present study maximum number of subjects are between 30 and 50 years the mean being approximately 41 ± 6.The age group is similar in distribution to other studies. As most of the women belong to low socio economic status, they presented late to OPD, only after symptoms have become significant.

RACE:

Myomas are more common in women of black race when compared to the age controlled white population. The possible cause is the racial differences in the biosynthesis and metabolism of estrogens. Laughlin et al. studied the prevalence of fibroids among different races and found the prevalence as 18% in Black women, 8% in White women, 10% in Hispanic women.

Majority of women were parous in the present study, most being para 2 (46%) only 8% are nulliparous. Mean parity was 1 ± 1 in the present study. The findings of the present study are consistent with the findings by Muslina Akther et al and Mitesh Gavli et al. According to Amir T Khan et al, parity is inversely associated with risk of fibroid development. Mitesh Gavli et al showed that incidence of fibroids in nulliparous women was 25% and in parous women as 75%. Baird et al showed pregnancy is associated with reduced risk of fibroids.

AGE AT MENARCHE:

In the present study, the age at menarche in majority of cases (92%) is between 11 – 15 years compared to 90% in controls. No statistical association is found between the age at menarche and fibroid occurence. Cramer et al 1995; Parazzini et al. 1988, Samadi et al. 1996, suggest that there is a slightly increase risk of fibroids associated with early menarche. Marshall et al. 1998, found that women who were ≥ 16 years of age at menarche were at lower risk. The early onset of menstrual cycles may increase the number of cell divisions that the myometrium undergoes during the reproductive years, resulting in an increased chance of mutation in genes controlling myometrial proliferation.

OBESITY:

The mean BMI in the present study is 27.2. In a study by Seema Saheran et al the mean BMI was 26.64.Both the studies showed that fibroids are more common in overweight and obese patients. Ross et al. 1986[8], showed that risk increases approximately 21% for each 10 kgs increase in bodyweight. The reason could be increased conversion of circulating adrenal androgens to estrogens by excess adipose tissue. The hepatic production of SHBG is decreased, resulting in more unbound physiologically active estrogen. It is possible that the increase of biologically available estrogen could be responsible for an increase in myoma prevalence and growth in over weight and obese women. Results from BWHS revealed a complex non linear, but inverse J shaped pattern between BMI and myoma risk.

FAMILY HISTORY:-

A number of lines of evidence support a genetic basis for uterine fibroid formation. These include ethnic variation, familial pre-disposition, twin studies and unique familial syndromes. In 1973 Reed et al, described a syndrome of familial cutaneous and uterine leiomyomata. Tomlinson et al, have demonstrated that germ line mutations in the gene for fumarate hydratase, a Kreb's cycle enzyme, predispose dominantly to inherited uterine fibroids, skin leiomyomata and papillary renal cell carcinoma.

DIET:-

In the present study a positive association is found between non vegetarian diet and myoma formation. Radmilla Sparic MD et al showed myoma formation risk is higher in women consuming food with a higher glycemic index. This study also showed a positive link between fibroids and diet rich in red meat. Chiaffarino et al[9], conducted a case control study in Italy which demonstrated that women with myomas had a higher intake of beef, other red meat, ham and a lower intake of green vegetables, fruits and fish. Wise et al, confirmed an increase risk associated with intake of long chain omega 3 fatty acids, specifically marine fatty acids, the main source of which is dark meat fish. He also validated that a diet rich in fruits and vegetables reduce the risk of myomas.

EXERCISE:-

In the present study among 100 cases 56% are having a sedentary life style compared to 41% in controls. No statistical association could be made between exercise and occurrence of fibroids. Biard et al[9],

found a marginal association between myomas and physical activity. A reduced risk of myoma formation is found in women who take physical exercise and have a normal body weight. Women with moderate intensity of physical activity had significantly lower myoma developmental risk.

SECONDARY SMOKING:-

The present study showed a reduced risk of occurrence of fibroids in women who smoke. The findings are consistent with studies conducted by Lumbiganon et al. 1996, Parazzini et al and Daniel et al. Ross et al. 1996, study showed that women who smoked 10 cigarettes per day had 18% decreased risk when compared to non smokers. The inverse correlation is commonly attributed to anti estrogenic effect of cigarette smoking. Nicotine inhibition of aromatase enzyme reduces the conversion of androgens to estrogen.

ALCOHOL & CAFFINE:-

In the present study there is no association between alcohol consumption and increased occurrence of fibroids. Wise et al found that alcohol consumption increases the risk of fibroids. Chiaffarano et al in Italy did not notice any association between myoma risk and intake of coffee, tea or alcohol.

INSECTICIDE EXPOSURE:-

In the present study, 28% of the cases are exposed to insecticides when compared to 5% in controls. This is statistically significant. Hence the association between insecticide exposure and occurrence of fibroids is confirmed. The findings are consistent with the study by Saxena et al. 1987. Cecil et al. 1971 – The pesticide dichlorodiphenyltrichloro ethane (DDT) and its analogs have been shown to be estrogenic. Saxena et al. 1987, found significantly higher levels of DDT and its metabolites in uterine leiomyomatous tissue than in normal myometrium. Enmark et al. 1997, recognized ER – β binds to methoxychlor and bisphenol A, with considerably higher affinity.

OC PILLS:

In the present study only 3 cases and 5 controls give a history of OC pill usage. The results are not statistically significant. This could be because most of them belong to low socio economic status, and hence many of them are not OC pill users. John & Martin et al. 1971 found positive association between occurrence of fibroids in use of OC Pills. Parazzini et al. 1992 reported a reduced risk of fibroids with OC pill usage. These conflicting findings may be related to the differing content of estrogen and the type of progestogen in each specific OC preparation. Marshell et al – A significantly elevated risk of fibroids has been reported among those who first used OCs in their early teenage years (13 – 16 yrs) compared to those who have never used them.

INSECTICIDE EXPOSURE:

In the present study, 28% of the cases are exposed to insecticides when compared to 5% in controls. This is statistically significant. Hence the association between insecticide exposure and occurrence of fibroids is confirmed. The findings are consistent with the study by Saxena et al. 1987. Cecil et al[9]. 1971 – The pesticide dichlorodiphenyltrichloro ethane (DDT) and its analogs have been shown to be estrogenic.

MICRONUTRIENTS:

Dietary intake of Vitamin C, E, folate were not found to be associated with myoma formation risk. Hypovitaminosis D is found to be a potential risk factor for fibroid formation. Wise et al, demonstrated an inverse association between dietary vitamin A intake and myoma risk in black women.

STRESS:

Vines et al, found a positive association with myomas among women having high stress. Stress affects the hypothalamo – pituitary gland axis and causes increase of estrogen and progesterone levels, leading to increased occurrence of fibroids.

CAFFINE INTAKE

Wise et al[11] found no association between caffine consumption and fibroid formation.

CO – MORBIDITIES:

HTN - In a study conducted by Boynton et al, a positive association was determined between higher diastolic pressure and myoma risk. According to the results of the study, the duration of hypertension also increases the myoma formation risk. The cause may be that HTN causes cytokine release and injury to smooth muscle of uterus.

HORMONE REPLACEMENT THERAPY:-

Fibroids are expected to shrink after menopause, but HRT may prevent this shrinkage and may even stimulate growth. Polatti et al. 2000 asserted that an increase in volume and number of uterine myomas during HRT in postmenopausal women is likely not related solely to the dose and route of administration of estrogen, but also the type and dosage of progestogen.

TAMOXIFEN:- It is a partial estrogen agonist that binds to ERs in receptive cells, thereby antagonising the effects of estrogen by competitively binding to target organ receptors. But contrary to the regular belief, in a recent review by Deligdisch 2000, tamoxifen for breast carcinoma was reported to exert an estrogen agonist effect on the uterus in approximately 20% of patients, who developed endometrial polyps, glandular hyperplasia, adenomyosis and leiomyomata.

SYMPTOMS

In the present study the most common presenting symptoms was menorrhagia which was seen in 75% of the patients followed by pain abdomen in 17% of cases. Abdominopelvic mass was not included in the present study, because small fibroids which do not cause uterine enlargement are also included in the study.

Management Options For Fibroids

Treatment option	Percentage
Mifepristone	7
LNG-IUS	11
Abdominal hysterectomy	60
Vaginal hysterectomy	0
Laparoscopic hysterectomy	1

Majority[60%] of the patients had abdominal hysterectomy in the present study. This may be because, most of the patients belong to low socioeconomic status with poor educational background and present late to the OPD.

V. Summary

The present study is an observational case control study.100 cases and 100 controls were included. This study is carried out with an aim to determine the factors associated with the occurrence of fibroids. Detailed history and data regarding age, socio-economic status, parity, abortions, occupation, age at menarche, chief complaints, family history, diet, caffeine intake, smoking, alcohol, OCpills, HRT, storage of water in plastic containers, insecticide usage is taken. Associated co-morbidities like HTN, DM, Hypothyroidism is taken note of. Detailed clinical examination is done and appropriate investigations are carried out. In the present study, out of 100 cases, majority of patients were between 41-50yrs.The eldest patient is 54 yrs of age. Majority of patients belonged to middle socio-economic class and were Para 2. The most common symptom was abnormal uterine bleeding seen in 75% of patients, followed by pain abdomen seen in 17%.12% of cases had age at menarche between 11-15 yrs. Majority [82%]had no history of abortions. Among the cases,38% are in overweight group and 16% in the obese group. There is family history of fibroids in 15% of cases. Among the cases,87% consume non-veg food,56% lead a sedentary lifestyle,23% give a history of secondary smoking.8% consume alcohol and 28% are exposed to insecticides.3% give a history of OCP usage.16% give history of storage of water in plastic containers. Among the cases 15% are found to have HTN,6% have both HTN and DM,6% have hypothyroidism. After comparing with the age matched control population, it is found that obesity, non veg diet, family history, insecticide exposure, storage of water in plastics are found to increase the incidence of fibroids. Alcohol consumption, OC pill usage, associated comorbidities like HTN and DM do not have any association with fibroids. Secondary smoking and exercise is found to decrease the incidence of fibroids.

VI. Conclusion

Uterine leiomyoma is one of the most common tumor arising from the muscular layer of the body of uterus. About 50% patients are symptomatic. Symptoms include menorrhagia, dysmenorrhea, abdominal pain and urinary symptoms which result in significant compromise in the quality of life. Despite being so common, the causative factors for fibroids remain obscure. It has been found out that genetic factors and hormonal factors along with certain environmental factors are implicated in causation of fibroids. The present study is carried out to find the causative factors for fibroids. In the present study obesity, non-veg diet, insecticide exposure, storage of water in plastics is found to increase the incidence of fibroids.

References

[1]. Prathap Kumar, Jaideep Malhotra, Neeharika Malhotra, Bora. Tumors of the Corpus Uteri. Leiomyoma. Parul Mittal Jeffcoat's Principles of Gynecology. 8th edition Jaypee Publishing 2014: 453.

[2]. Rock, Johan A. Jones, Howar W 111. Leiomyoma uteri and myomectomy. Te Linde's Operative Gynaecology.10thedition.Philadelphia: Lippincott Williams and Wikkins (LWW); 2008.Pp687-688.

[3]. Lurie S, Piper I, Woliovitch I, Glezerman M. Age related prevalence of sonographically confirmed uterine myomas. J Obstet gynaec 2005;25:42-44.

[4]. Lethaby A, Vollenhoven B.Fibroids (Uterine myomatosis, Leiomyomas) Am. Fam. Physician 2005; 71:1753-6.

[5]. Baird DD, Schectman JM, Dixon D, Sandler DP, Hill MC. 1998. African Americans at higher risk than whites for uterine fibroids: ultrasound evidence. Am J Epidemiol 147:S90.

[6]. Ligon AH, Morton CC. 2000. Genetics of uterine leiomyomata. Genes Chromosomes Cancer 28:235–245. 2001. Leiomyomata: heritability and cytogenetic studies. Hum Reprod Update 7:8–14.

[7]. Nilbert M, Heim S. 1990. Uterine Leiomyoma Cytogenetics. Genes Chromosomes Cancer 2:3–13

[8]. Ross RK, Pike MC, Vessey MP, Bull D, Yeates D, Casagrande JT. 1986. Risk factors for uterine fibroids: reduced risk associated with oral contraceptives. Br Med J (Clin Res Ed) 293:359–362.

[9]. Chiaffarino F, Parazzini F, La Vecchia C, Chatenoud L, Di Cintio E, Marsico S. 1999. Diet and uterine myomas. Obstet Gynecol 94:395–398.

[10]. Cecil HC, Bitman J, Harris SJ. 1971. Estrogenicity of o,p'-DDT in rats. J Agric Food Chem 19:61–65.

[11]. Wise LA Palmer JR, Stewart EA et al. Age –specific incidence rates for selfreported uterine leiomyomata in the Black Women's Health study. Obstet Gynecol 2005; 105: 563-568.

Aruna Reddy G. "Clinical Profile and Epidemiology of Fibroid in Women in Tertiary Care Centre." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), Vol. 18, no. 02, 2019, pp. 38-48.