



**Research Article**

## **EPIDEMIOLOGY OF HEMORRHOIDS IN TRIBAL POPULATION**

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### **ABSTRACT**

Hemorrhoids is one of most common disease affecting people since ages. Our study aims to study epidemiology and find risk factors for hemorrhoids disease in tribal population

**Key words:**

Hemorrhoids, Epidemiology, Population

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### **INTRODUCTION**

The word “hemorrhoid” is derived from Greek word hemorrhoids, meaning flowing of blood. The word “piles” come from Latin word pila meaning pill or ball. To be accurate, we should call the disease as ‘piles’ when the patient complaints of a swelling and ‘hemorrhoids’ when he or she complaints of bleeding.

Hemorrhoids are one of the most common ailments to afflict mankind for centuries the human race has been plagued by hemorrhoids since they attained the erect posture, but it is impossible to give an accurate figure for their prevalence. It is most common benign anorectal problem worldwide. However it has been met with a mixture of sceptism and interest. The hemorrhoids can occur at any age group and can affect both sexes. Their diagnosis and management is complicated by their relative infrequency and wide range of biological behavior. Although many patients present with symptomatic disease, many do not and some never have symptoms, whether such individual can be consider to have a disease must remain a moot point.1, 2 . It is impossible to give an accurate figure of prevalence of hemorrhoids but which can also be because of lack of knowledge and ignorance specifically in tribal population. Many cases are subclinical and as well as lack of adequate clinical facilities in tribal population exact incidence and other related factors with this disease are not been studied thoroughly. This study consists of assessment of epidemiological factors and prevalence of hemorrhoids in

tribal population of north Maharashtra, as our institute is situated in tribal region so this study is oriented towards this population. Most of other studies regarding to etiological and epidemiological factors are been carried out in western and urban population. Though risk factors like westernization of food i.e. low fiber diet, sedentary life style are not common but strenuous activity, heavy weight lifting other causes of raised intra-abdominal pressure are playing important role in pathogenesis of the disease.

### **AIMS AND OBJECTIVES**

1. To study various etiological factors and risk factors of hemorrhoids
2. Correlate etiological factors and prevalence of tribal population with urban.
3. Study clinical presentation of disease

### **METHODOLOGY**

**Source of data**

The present study was conducted in Department of General Surgery of ACPM Medical College, Dhule, Maharashtra, over the period of 2 years duration from October 2013 to September 2015, on patients presenting with complaints of bleeding per rectum in OPD of general surgery of our institute.

**Method of study**

The study was observational study of epidemiology of hemorrhoids in tribal population.

The study was approved by institutional ethical committee followed the guideline laid out by Indian Council of Medical Research (ICMR).

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In the present study, 250 cases of hemorrhoids were included, presented with complaints of bleeding per rectum, associated with or without pain, protruding mass, discharge and irritation.

The detailed history of each patient was taken with patient's information including education and income, chief presenting complaints, duration, personal history like addiction, constipation, family history, diet history with detailed general examination, systemic examination and local examination including proctoscopy as per proforma made.

All data was collected in data sheets regarding age, gender, address, occupation (heavy weight lifting), income, education, presenting complaints, duration, alteration in bowel habit, diet, addiction, physical activity like walking, height, weight, BMI, central obesity, pallor, grades of hemorrhoids, complications.

**Inclusion criteria's**

- Clinically diagnosed case of hemorrhoids
- Both internal and external hemorrhoids

**Exclusion criteria**

Other differential diagnosis of bleeding per rectum  
Collected data was analyzed and compare with other studies.

The study would be conducted over a period of 2 years on patients presenting with complaints of bleeding per rectum in OPD of general surgery of our institute. This study will collect data which include patient's information, complaints, history, general examination, and systemic examination, local examination i.e. per rectum and proctoscopic examination. Hemoglobin estimation has been done in every patient.

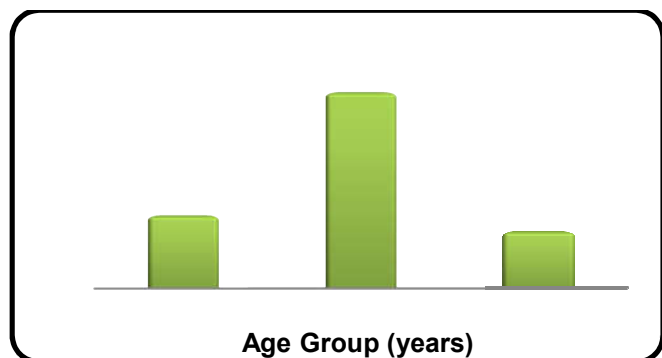
**RESULT**

Total 3248 patients had attended the surgical OPD during the study period of then 250 patients having hemorrhoids were included in the study. The prevalence of hemorrhoids in the tribal patients attending the OPD was 7.7%. These 250 patients were in age range of 24 to 72 years with mean age of 50.6 years and 10.8 yrs. standard deviation.

**Table No 1** Age Group wise distribution of patients having hemorrhoids.

Age Group (years)	Frequency	Percent
21 to 40	56	22.4
41 to 60	151	60
61 to 80	43	17.2
Total	250	100.0

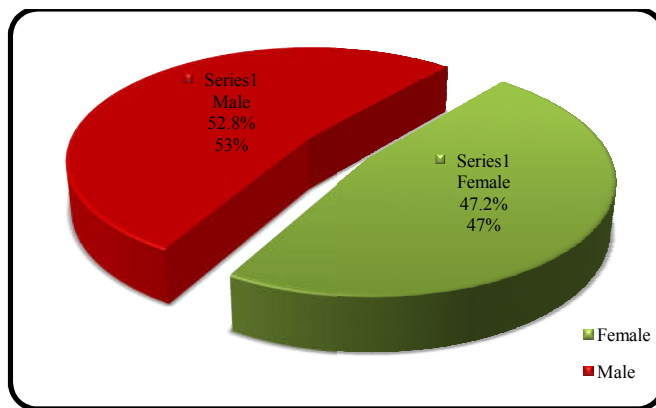
In present study out of 250 patients having hemorrhoids, maximum patient's i.e. 60% were within 41 to 60 years age group and 22.4% were 21 to 40 years old. Only 17.2% patients having hemorrhoid were within 61 to 80 years of age.



**Table No 2** Sex wise distribution of patients having hemorrhoids.

Sex	Frequency	Percent
Female	118	47.2
Male	132	52.8
Total	250	100.0

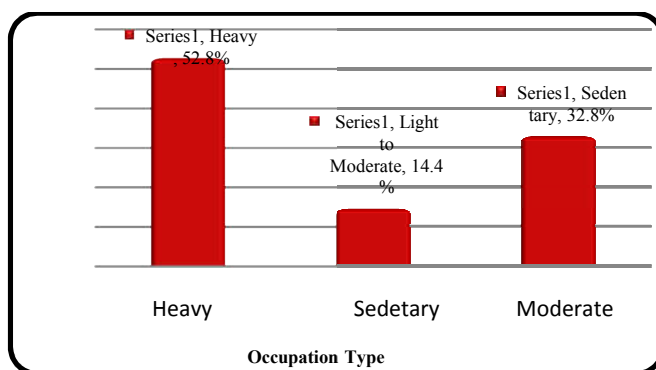
In 250 patients having hemorrhoid, 47.2% were females and 52.8% male. Male to female ratio was 1:0.9. More males suffering from hemorrhoids than females.



**Table No 3** Type of occupation of patients having hemorrhoids.

Type of Occupation	Frequency	Percent
Heavy	132	52.8
Light To Moderate	82	32.8
Sedentary	36	14.4
Total	250	100.0

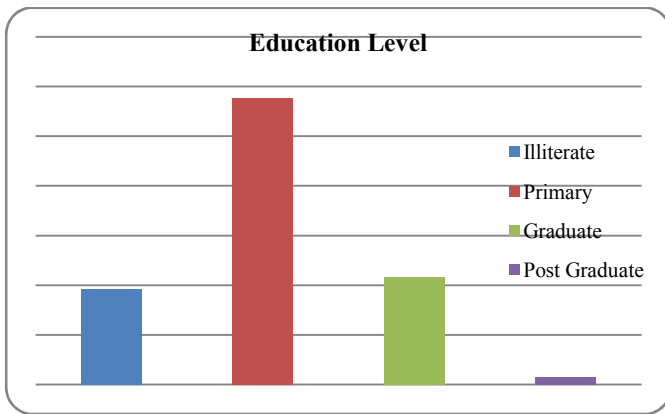
In the study 52.8% patients having hemorrhoids were engaged in heavy work, 32.8% had light to moderate work while 14.4% patients had sedentary type of occupation.



**Table No 4** Educational level of patients having hemorrhoids.

Educational level	Frequency	Percent
Illiterate	48	19.2
Primary	144	57.6
Graduate	54	21.6
Post graduate	4	1.6
Total	250	100.0

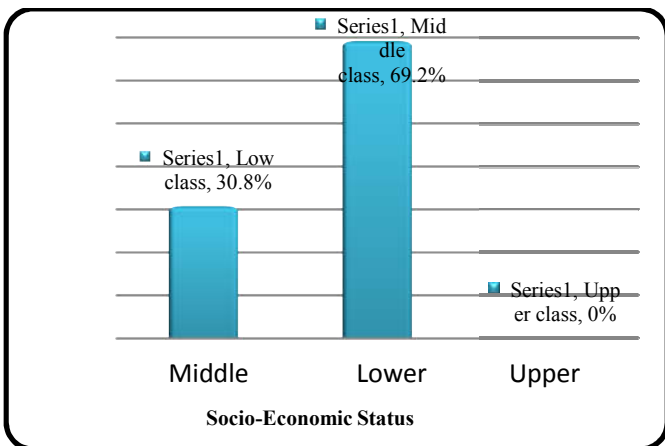
Education of maximum patient's i.e. 57.6% and 21.6% having hemorrhoids was up to primary level and graduate level respectively. While 19.2% and 1.6% patients were illiterate and post graduate level of education respectively.



**Table No 5** Socio Economic status of patients having hemorrhoids.

Socio Economic Status	Frequency	Percent
Low class	173	69.2
Middle class	77	30.8
Upper class	00	00
Total	250	100.0

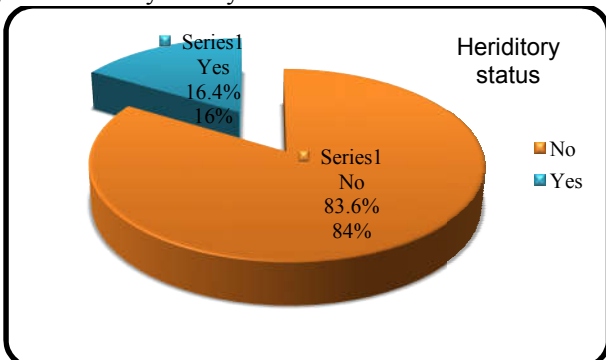
Socio economic status of maximum patient's i.e. 69.2% was of Lower class while 30.8% were from Middle class. None of the patient in our study was from upper socio economic class.



**Table No 6** Family history of hemorrhoids in patients having hemorrhoids.

Family H/O	Frequency	Percent
No	209	83.6
Yes	41	16.4
Total	250	100.0

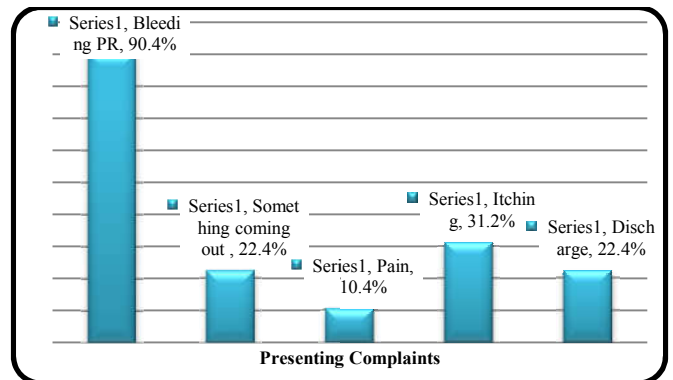
Out of 250 patients 16.4% patients had significant family history of hemorrhoids and 83.6% patients didn't give significant family history.



**Table No 7** Presenting complaints of patients having hemorrhoids.

Chief complaints	Frequency	Percent
Bleeding PR	226	90.4
Something coming out of anal canal	56	22.4
Pain	26	10.4
Itching	78	31.2
Discharge	56	22.4

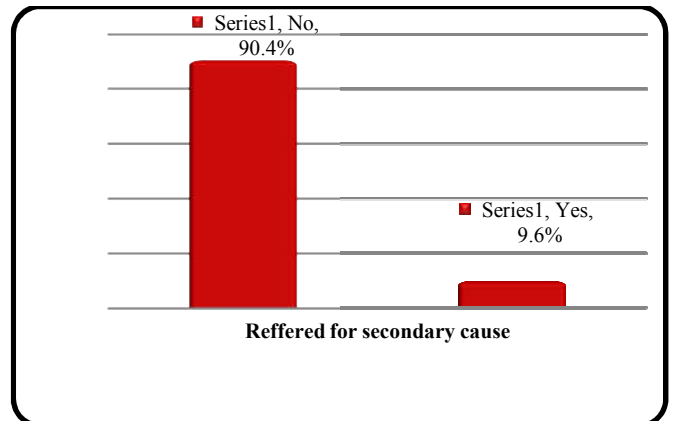
90.4% patients had chief complaint of bleeding per rectum and 10.4% had pain. Also 31.2% patients complain itching, 22.4% complaint of either something coming out of anal canal or discharge.



**Table No 8** Patients having hemorrhoids referred for secondary cause of anemia.

Referred for secondary cause	Frequency	Percent
No	226	90.4
Yes	24	9.6
Total	250	100.0

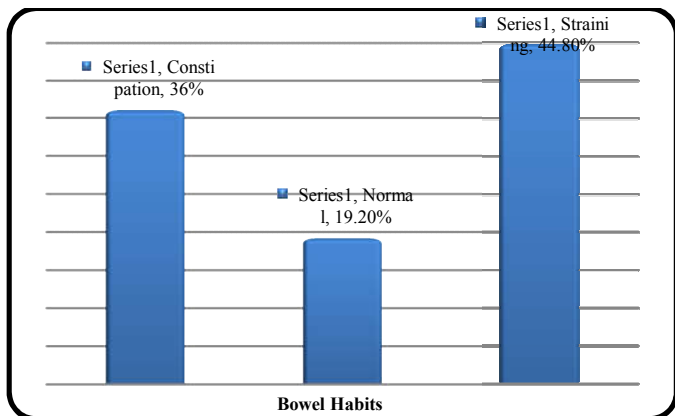
In 250 patients 9.6% were referred for secondary cause and were also having the symptoms suggestive of hemorrhoids.



**Table No 9** Bowel habits of patients having hemorrhoids.

Bowel habits	Frequency	Percent
Constipation	90	36.0
Normal	48	19.2
Straining	112	44.8
Total	250	100.0

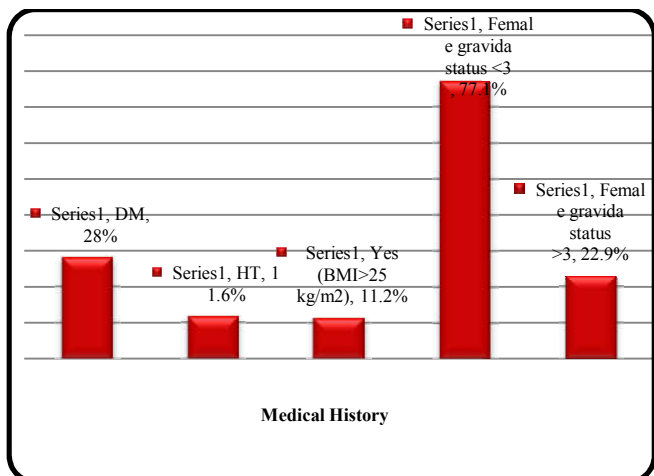
36% patients having hemorrhoids had chronic constipation, 44.8% had history of straining for stools while in 19.2% the bowel habits were normal.



**Table No 10** Medical history of patients having hemorrhoids.

Medical history	Frequency	Percent
Diabetes Mellitus Present	70	28.0
Hypertension Present	29	11.6
Obesity (BMI>25 Kg/m <sup>2</sup> ) Yes	28	11.2
Gravid status in Female (n=118) ≤3	91	77.1
>3	27	22.9

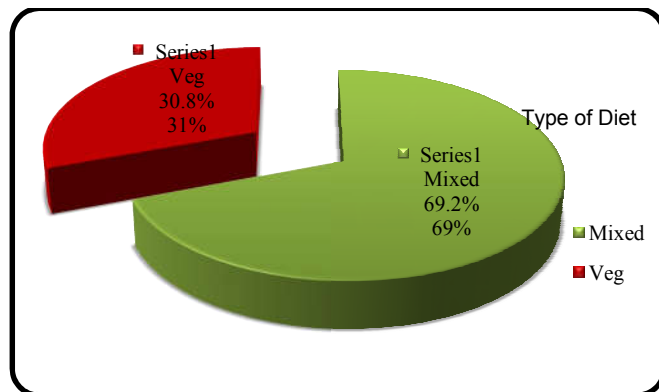
Of 20 patients having hemorrhoids, past history of diabetes mellitus was noted in 28% while 11.6% patients were suffering from hypertension. In 11.2% body mass index was more than 25 kg/m<sup>2</sup> and were obese. Of 118 females having hemorrhoids, 22.9% were more than 3 gravid while 77.1% up to 3 gravid.



**Table No 11** Dietary history of patients having hemorrhoids.

Type of diet	Frequency	Percent
Mixed	173	69.2
Veg	77	30.8
Total	250	100.0

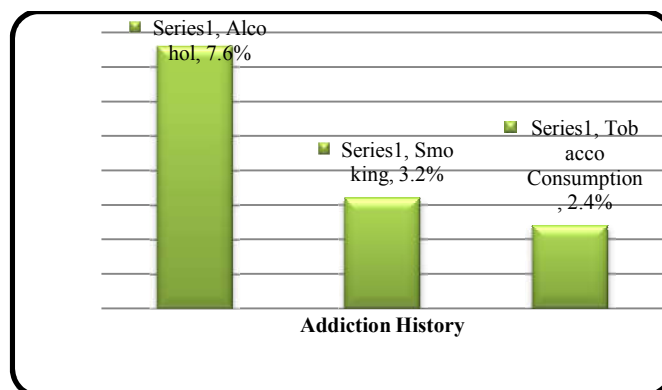
Dietary habit of 30.8% was purely vegetarian while 69.2% patients were having mixed, vegetarian and non-vegetarian diet in their meals.



**Table No 12** Addiction history of patients having hemorrhoids.

Addiction	Frequency	Percent
Alcohol	19	7.6
Smoking	8	3.2
Tobacco Consumption	6	2.4

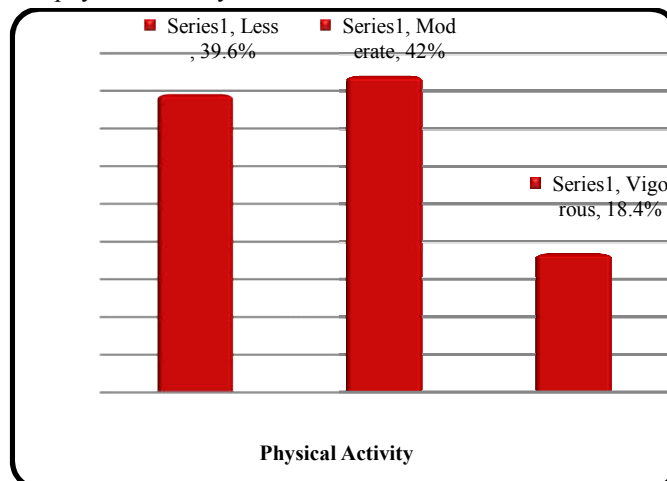
Out of 250 patients, 7.6% revealed of regular alcohol consumption, 3.2% stated to be smokers and 2.4% revealed to be tobacco consumers.



**Table No 13** Physical activity level of patients having hemorrhoids.

Physical Activity	Frequency	Percent
Less	99	39.6
Moderate	105	42
Vigorous	46	18.4
Total	250	100.0

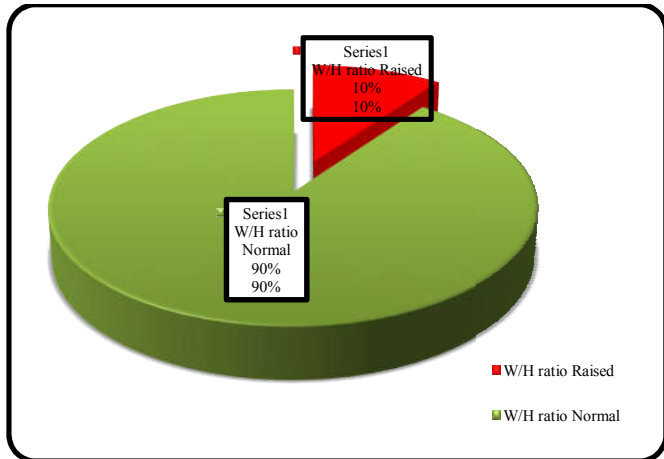
In present study 42% patients had stated that they were involved in moderate physical activity while 18.4% had vigorous physical activity. But 39.6% indicated to be having less physical activity.



**Table No 14** Abdominal obesity status (W/H ratio) of patients having hemorrhoids.

Wait to Hip ratio	Frequency	Percent
Raised (W/H ratio >90 in male, >85 in female)	25	10
Normal	225	90
Total	250	100

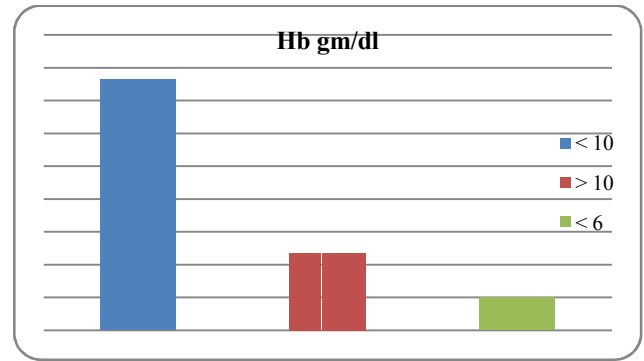
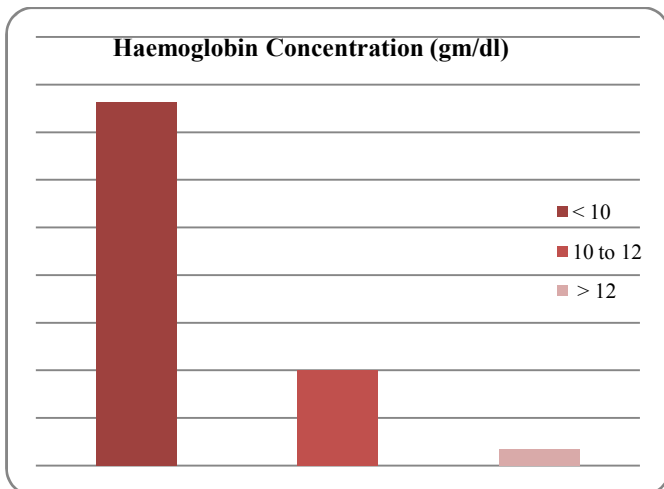
Abdominal obesity with the raised waist of hip ratio was noted in 10% patients while 90% had normal waist to hip ratio and no abdominal obesity.



**Table No 15** Hemoglobin concentration of patients having hemorrhoids.

Hemoglobin concentration (gms/dl)	Frequency	Percent
>12	9	3.6
10.1 to 12	50	20.0
<10	191	76.4
<10	191	76.4
>10	59	23.6
Total	250	100.0
Severe anemia <6	25	10.0

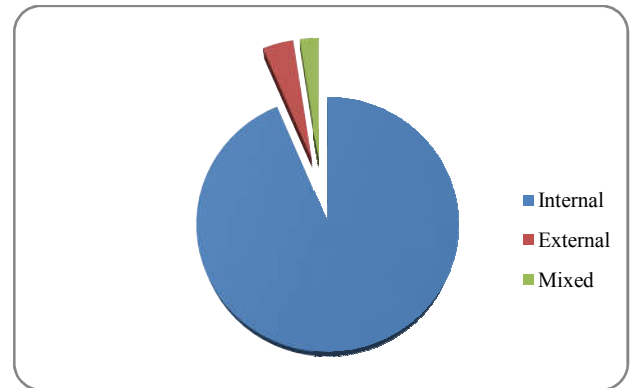
Hemoglobin concentration of 60.4% was reduced to be < 10 gm/dl, 20% had Hb in between 10.1 to 12 gm/dl while 3.6% had hemoglobin more than 12 gm/dl. The classification of 10 gm/dl revealed that 60.4% were having less than 10 gm/dl and 39.6% had more than 10 gm/dl hemoglobin concentration. 10 % of patients were suffering from severe anemia with hemoglobin < 6 gm/dl.



**Table No 16** Type of hemorrhoids in patients.

Type	Frequency	Percent
External	10	4
Internal	234	93.6
Mixed	6	2.4
Total	250	100

Out of 250 patients having hemorrhoids, 6.4% patients had external and 93.6% had internal hemorrhoids.

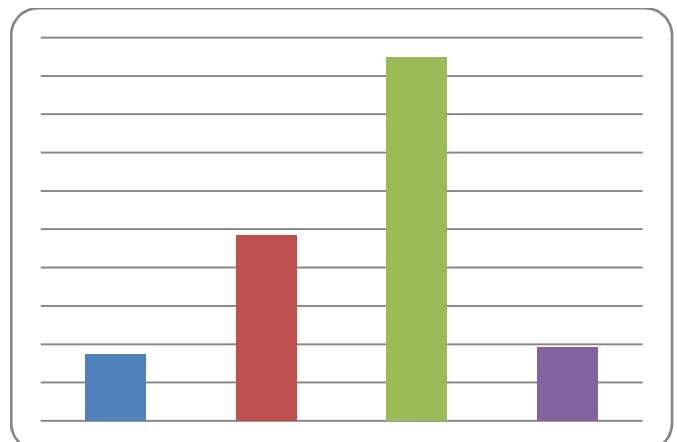


**Types of Hemorrhoids**

**Table No 17** Proctoscopy grades of hemorrhoids in patients.

Grade Proctoscopy	Frequency	Percent
1	21	8.7
2	58	24.2
3	114	47.5
4	47	19.6
Total	240	100.0

Grading is done in internal and mixed types of hemorrhoids. Maximum patients having Hemorrhoids in present study i.e. 47.5% had Grad 3 hemorrhoids, 24.2% had Grade 2 while 8.7% had Grade 1 hemorrhoids. Also 19.6% patient had Grade 4 hemorrhoids on proctoscopy examination.

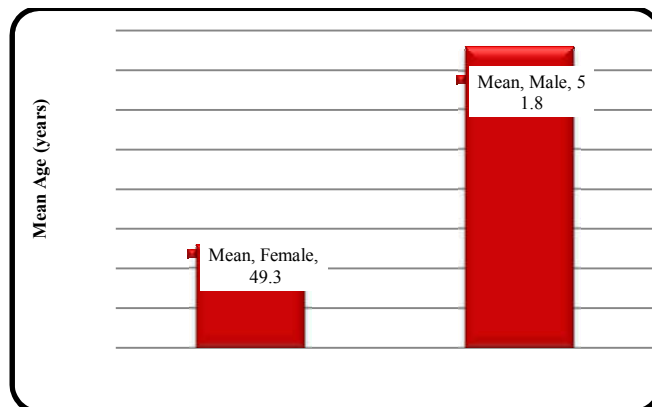


**Grades of Hemorrhoids**

**Table No 18** Complication of hemorrhoids in patients

		Frequency	Percent
Complication	No	202	80.8
	Yes	48	19.2
Type of complication	Prolapsed	18	7.2
	Thrombosed	5	2.0
	Hemorrhage	25	10.0

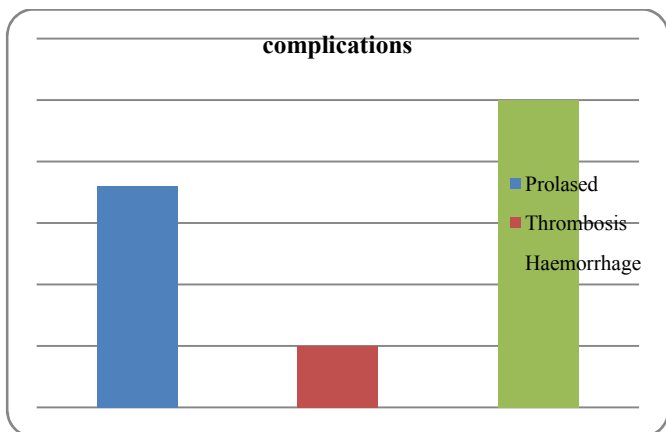
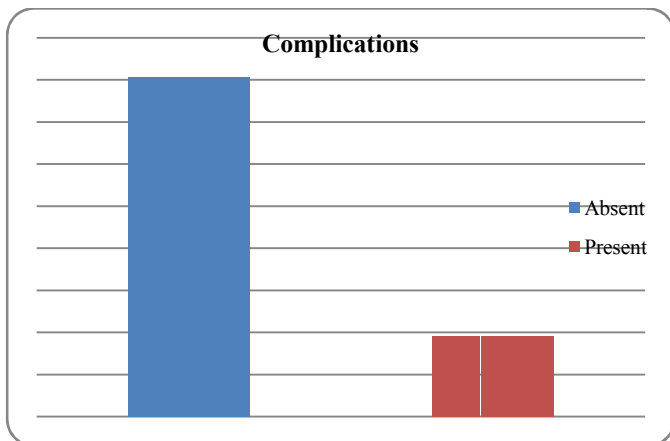
In present study 9.6% patient had complicated hemorrhoids. It was noted that 7.2% had prolapse, 2% had thrombosed hemorrhoids and 0.4% had hemorrhage due to hemorrhoids.



**Table No 20** Comparison of age group of patients having hemorrhoids according to sex.

Age Group	Sex		Total
	Female	Male	
21 to 40	30 53.6%	26 46.4%	56 100.0%
41 to 60	74 49.0%	77 51.0%	151 100.0%
61 to 80	14 32.6%	29 67.4%	43 100.0%
Total	118 47.2%	132 52.8%	250 100.0%
Pearson	$\chi^2$ Value	df	P value
Chi-Square Tests	4.809	2	.090

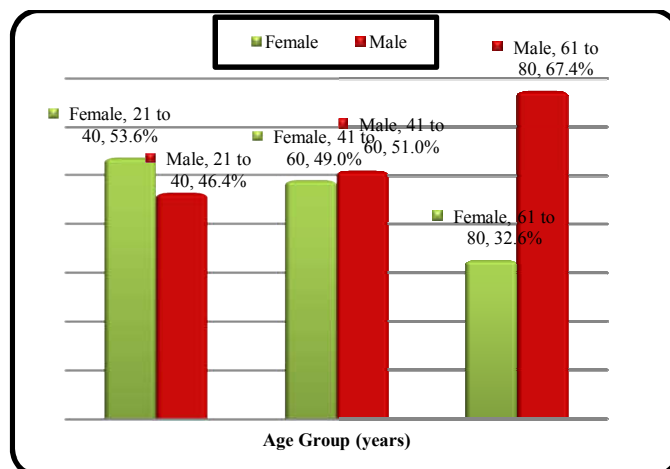
Percentage in 21 to 40 years age group of females was slight more than male, in 41 to 60 years and 60 to 8 years age group males were more than females. There was statistically no significant ( $p > 0.05$ ) difference of the sex in either of age groups of patients having hemorrhoids.



**Table No 19** Comparison of mean age (years) of patients according to sex.

Age	Female	Male
Mean	49.3	51.8
S.D	10.5	11.0
Range (mini-max)	24-61	24-72
T value	-1.833	
P value	0.068	

Mean age of females having hemorrhoids was 49.3 years with 10.5 yrs S.D, while male patients mean age was 51.8 years with 11 years Standard deviation. There was statistically no significant ( $p > 0.05$ ) difference of mean age of patients in between the sex having hemorrhoids.



**Table No 21** Comparison of positive family history of patients having hemorrhoids according to sex.

Positive family H/O	Sex		Total
	Female	Male	
No	99 47.4%	110 52.6%	209 100.0%
	19 46.3%	22 53.7%	41 100.0%
Yes	118 47.2%	132 52.8%	250 100.0%
	$\chi^2$ Value	df	P value
Chi-Square Tests	.015	1	.904

Of those 41 patients having history of either father or mother suffering from hemorrhoids in their family, it was noted that 53.7% were males and 46.3% of females had this familial predisposition, hereditary status (positive family history) of hemorrhoids. There was statistically no significant ( $p > 0.05$ )



difference of the presence of hereditary status in between sex of patients having hemorrhoids in the study.

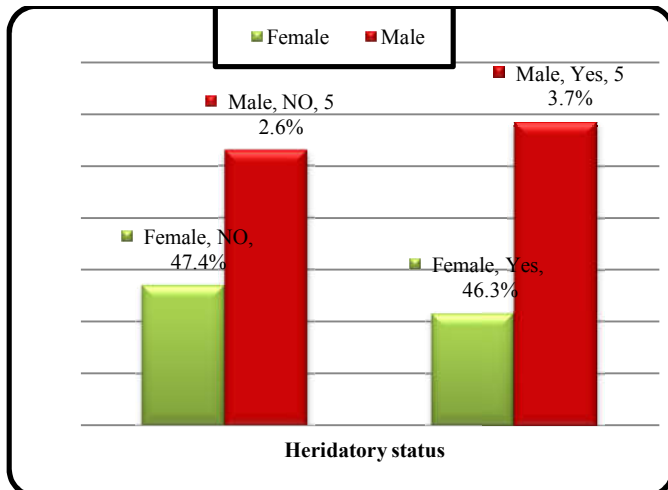


Table No 22 Comparison of presenting symptoms of patients having hemorrhoids according to sex.

Complaints	Status	Sex		Total	$\chi^2$ Value	P value
		Female	Male			
Bleeding PR	Present	108 (47.8%)	118 (52.2%)	226	0.326	.568
	Absent	10 (41.7%)	14 (58.3%)	24		
Pain	Present	51 (45.9%)	60 (54.1%)	111	.126	.723
	Absent	67 (48.2%)	72 (51.8%)	139		
Itching	Present	30 (38.5%)	48 (61.5%)	78	3.474	.062
	Absent	88 (51.2%)	84 (48.8%)	172		
Discharge	Present	26 (46.4%)	30 (53.6%)	56	.017	.896
	Absent	92 (47.4%)	102 (52.6%)	194		
Something coming out of anal canal	Present	26 (46.4%)	30 (53.6%)	56	.017	.896
	Absent	92 (47.4%)	102 (52.6%)	194		
Referred for secondary cause	Present	10 (41.7%)	14 (58.3%)	24	.326	.568
	Absent	108 (47.8%)	118 (52.2%)	226		

Out of 226 patients having complaint of bleeding PR, 52.2% were male and 47.8% were females. Of 111 patients complaining of pain, 54.1% were male and 45.9% were female patient. Of 78 patients having itching, 61.5% were male and 38.5% were females. Out of 56 hemorrhoid patients complaining of discharge, 53.6% were male and 46.4% were female. 56 patient with hemorrhoid complained of something coming out of anal canal, of them 53.6% were male and 46.4% were male. While 24 patients were first referred for secondary cause of anemia of them 58.3% were male and 41.7% were male patients.

Statistically there was no significant ( $p > 0.05$ ) difference of complaint of bleeding PR, pain, itching, discharge, prolapse and referred for secondary cause within the male and female patients having hemorrhoids.

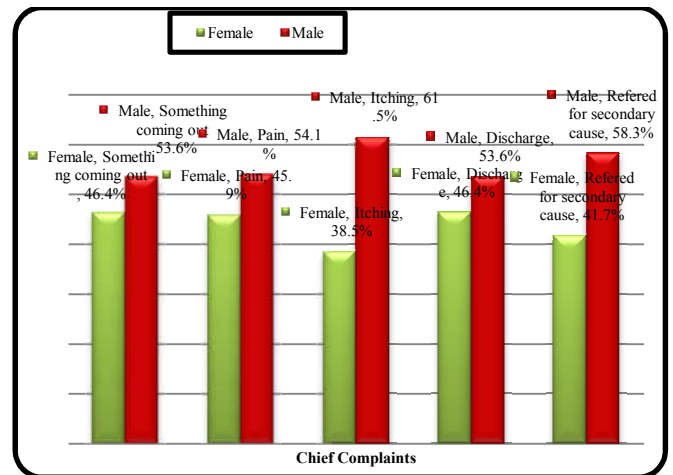


Table No 23 Comparison of bowel habits in patients having hemorrhoids according to sex.

Bowel habits	Sex		Total
	Female	Male	
Constipation	43 (47.8%)	47 (52.2%)	90 (100.0%)
Normal	23 (47.9%)	25 (52.1%)	48 (100.0%)
Straining	52 (46.4%)	60 (53.6%)	112 (100.0%)
Total	118 (47.2%)	132 (52.8%)	250 (100.0%)
Pearson Chi-Square Tests	$\chi^2$ Value	df	P value
	.049	2	.976

Constipation history was noted in 52.2% male patients and 47.8% female patients while 53.6% males and 46.4% female's revealed to be straining during stools in patients having hemorrhoids. Of those with normal bowel habits 52.1% were male and 47.9% were females. There was statistically no significant ( $p > 0.05$ ) difference of bowel habits within the sex of patient having hemorrhoids.

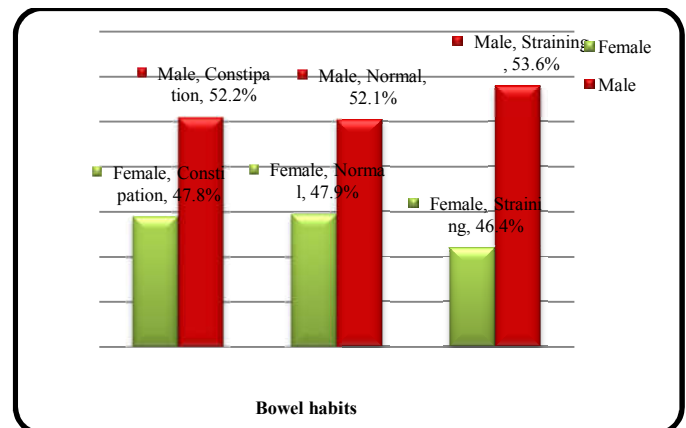
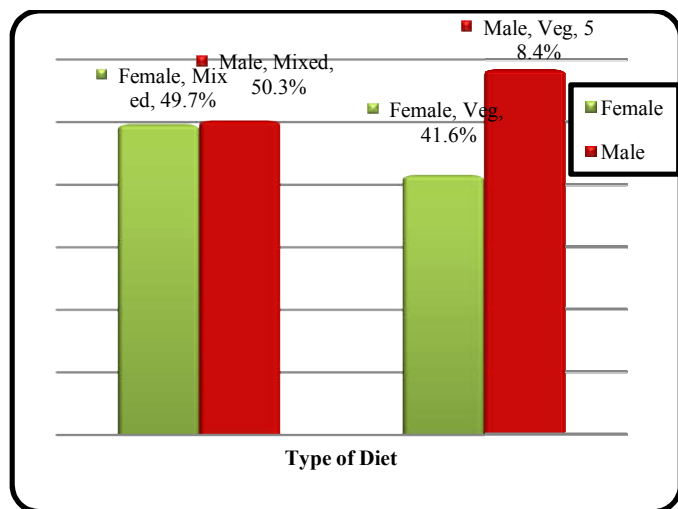


Table No 24 Comparison of dietary history of patients having hemorrhoids according to sex.

Type of diet	Sex		Total
	Female	Male	
Mixed	86 (49.7%)	87 (50.3%)	173 (100.0%)
Veg	32 (41.6%)	45 (58.4%)	77 (100.0%)
Total	118 (47.2%)	132 (52.8%)	250 (100.0%)
Pearson Chi-Square Tests	$\chi^2$ Value	df	P value
	1.421	1	.233

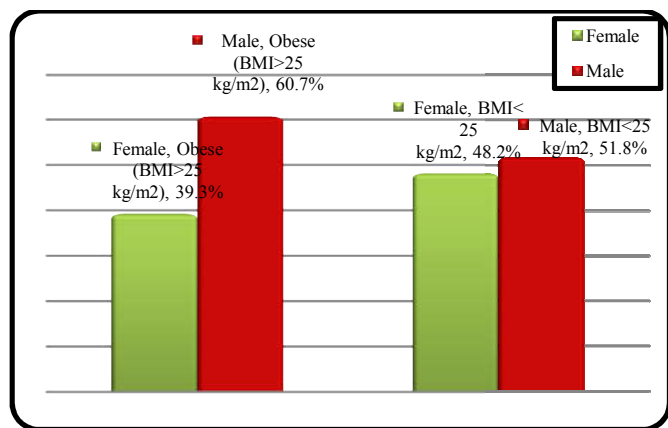
Of 173 patients consuming mixed diet, 50.3% were male and 49.7% were females. Out of 77 patients who were consuming vegetarian diet; 58.4% male and 41.6% female developed hemorrhoids. There was statistically no significant ( $p>0.05$ ) difference of the type of diet within the sex of patients having hemorrhoids.



**Table No 25** Comparison of obesity (BMI > 25 kg/m<sup>2</sup>) of patients having hemorrhoids according to sex.

Obesity	Sex		Total
	Female	Male	
Yes (BMI > 25 kg/m <sup>2</sup> )	11 (39.3%)	17 (60.7%)	28 (100.0%)
Not (BMI < 25 kg/m <sup>2</sup> )	107 (48.2%)	115 (51.8%)	222 (100.0%)
Total	118 (47.2%)	132 (52.8%)	250 (100.0%)
<b>Pearson Chi-Square Tests</b>	$\chi^2$ Value	df	P value
	.792	1	.373

Of 28 obese patients according to BMI more than 25 kg/m<sup>2</sup>, 60.7% were male and 39.3% were female. There was statically no significant ( $p>0.05$ ) difference of obesity status within the sex of patients having hemorrhoids.



## DISCUSSION

Hemorrhoids are a widely occurring frequent disorder. In the present observational hospital based study, the clinical epidemiology of hemorrhoids was evaluated during 2 years period in tribal population visiting the institute.

Our study included 250 tribal patients visiting OPD during the study period, which were diagnosed of hemorrhoids. They

were in age range of 24 to 72 years with mean age of 50.6 years and 10.8 yrs standard deviation.

### Prevalence

Total 3248 patients attended the surgical OPD during study period out of which 250 were diagnosed of hemorrhoids and included in study. The prevalence of hemorrhoids in the tribal patients attending OPD was 7.7%. In United States 10 million patients of complaining of hemorrhoids and prevalence rate was 4.4 %.(9)

### Age

They were in age range of 24 to 72 years with mean age of 50.6 years and 10.8 yrs standard deviation. Maximum patients' i.e. 60% were within 41 to 60 years age group.

Comparing with other studies on hemorrhoids in patients the lower age limit of the studies groups were around 20 to 25 years whereas the upper age limit was higher in all studies ranging from 70-85 years.

Pigot had noted that haemorrhoidal disease patients were younger than control group (47 +/- 14.5 yrs vs. 52 +/- 16.5 yrs;  $P<0.0001$ ). (6)

According to C.C. Chung and colleagues mean age incidence for hemorrhoids is fifth decade. (7)

In United States hemorrhoids prevalence rate was 4.4%. In both sexes, peak prevalence occurred between age 45-65 years and the development of hemorrhoids before the age of 20 years was unusual. United Kingdom, hemorrhoids were reported to affect 13%-36% of the general population.(8)

In both sexes, a peak in prevalence was noted from age 45-65 years, with a subsequent decrease after age 65 years. The development of hemorrhoids before age 20 years was unusual. There is an increasing prevalence with age until the seventh decade after which there is slight decline.(9)

Our findings are consistent with that of R. S. Rai and K. Rupkumar series where he also noted that the common age group of hemorrhoid suffering patients was 40-50 years.(10)

The prevalence of hemorrhoids by age was highest (60.8%) among those aged between 45 and 49 years in the study by Riss *et al.*(11)

Johanson and Sonnenberg 50 reported the age range with the highest prevalence of hemorrhoids as between 45 and 65 years of age.

The prevalence was found to be highest in those aged between 40 to 49 years for both self-reported hemorrhoids (18.3%) and hemorrhoids by physician's diagnosis (9.7%), which was consistent with the findings of other studies.(12)

### Sex

In study male to female sex distribution of cases of hemorrhoids were 52.8:47.2. Similarly Approximately 60% of hospitalized patients with this condition were found to be men, according to Johnson and Sonnenberg 50 also majority being males in the ratio of 3.2:1. (10)

There was men predominance in hemorrhoids. 59% had symptoms for five or more years, and less than half had had some form of simple treatment. (13)



Ruffinhood (14) showed a 75:25 male female ratio respectively on the contrary to this Lee 56 performed rubber band ligation for higher number of female cases having hemorrhoids with a ratio of 52:48, i.e. male female respectively.

Taking both symptomatic and asymptomatic hemorrhoids into concern the prevalence of hemorrhoids is marginally more in male.(15)

Contrarily some study found sex ratio of hemorrhoid was not different from controls group patients.(11)

Pagots in his study found no difference of sex of patients having hemorrhoids compared to the control group patients.(6) Also women aged less than 40 years there was no significant risk factor related with genital activity was found for haemorrhoidal disease.

Overall prevalence of hemorrhoids among study subjects was 14.4%, being more prevalent among women (15.7%) than among men (13.0%).(12)

In our study there was statistically no significant ( $p>0.05$ ) difference of mean age and age groups in between male and female patients having hemorrhoids.

The prevalence of hemorrhoids by sex has been inconsistent between studies. We think the reason for this finding is that women tend to avoid undergoing anal examination for hemorrhoids diagnosis more than men. Therefore, the prevalence of hemorrhoids among males seems unlikely to be higher than that among females.

#### **Constipation and straining at stool**

In clinical practice constipation has long been realized to be associated with hemorrhoids. In each group one-third of all motions were hard and the incidence of bleeding was 2%.(13)

In our study 52.8% patients had heavy occupation, 36%patients had constipation and 44.8% had straining history while defecation.

Constipation was seen in 30% cases and straining was seen in 50% cases. Nivatongs has noted constipation and raised abdominal pressure due to straining as predisposing and associated factors of haemorrhoids.(4)

Diseases have their highest prevalence in communities who pass small firm stools and have prolonged transit times.(16)

Diarrhea associated with much tenesmus and futile straining may have a similar but has slightly less injurious effect.

Strangely, Bacon omitted the one form of straining most relevant to the problem, straining at stool.(16)

For hemorrhoids explanations being suggested: consider the basic cause to be the direct pressure of hard faecal masses on the haemorrhoidal veins, on the other hand, blamed the retrograde flow of blood in the haemorrhoidal veins caused by the intra-abdominal pressure resultant on straining at stool.(16) Constipation and prolonged straining are widely believed to cause hemorrhoids because

- Hard stool and increased intraabdominal pressure could cause obstruction of venous return, resulting in engorgement of the haemorrhoidal plexus. (8).
- Defecation of hard fecal material increases shearing force on the anal cushions some reports suggested that

diarrhea is a risk factor for the development of hemorrhoids Increase in straining for defecation may precipitate the development of symptoms such as bleeding and prolapse in patients with a history of haemorrhoidal disease.

- Pregnancy can predispose to congestion of the anal cushion and symptomatic hemorrhoids, which will resolve spontaneously soon after birth. Many dietary factors including low fiber diet, spicy foods and alcohol intake have been implicated, but reported data are inconsistent.(8)
- This low fibre diet inturn increases bowel transit time and forms hard stools, which causes constipation and straining of stools.(4)

In study there has been differences in the epidemiologic behavior of hemorrhoids and constipation with no relation between two.(9)

#### **Socioeconomic status**

Present study had 69.2% patients from lower class and 30.8% of middle socioeconomic class.

Hemorrhoids are particularly rare in communities which have departed least from their traditional manner of life but more in economically developed communities.(5)

Increased prevalence rates were associated with higher socioeconomic status by some study.(9)

Whites and higher socioeconomic status individuals were affected more frequently than blacks and those of lower socioeconomic status.(8)

Present study been the hospital based study and the community mostly visiting is from compromised economical status may have no patients from higher economic class.

#### **Occupation**

In our study 52.8% patients were in heavy type of occupation while 32.8% occupation was light to moderate. 14.4% patients having sedentary type of occupation.

Washaw LJ and Turell noted a number of patients in whom occupation strain or stress played an important role in precipitating prolapse of existing internal haemorrhoids.(5)

There was hemorrhoids preponderance in manual labourers with 60% cases. This observation is supported by Washaw LJ and Turell who noted that occupational strain and stress played important role in precipitating prolapse of existing internal haemorrhoids.(5)

#### **Obesity**

BMI  $\geq 25.0$  kg/m<sup>2</sup> (obese group) was noted in 11.2% patients while 10% had raised waist to hip ratio.

Obesity and abdominal obesity were associated with a higher risk of hemorrhoids with odds ratio (OR) (95% confidence intervals, 95% CI) of 1.13 (1.01 to 1.26) and 1.16 (1.04 to 1.30), respectively.(12)

Body mass index (BMI) had a significant effect on the occurrence of hemorrhoids. In Korean Americans with hemorrhoids, female gender (58.3% vs 49.1%,  $p=0.023$ ) and obesity (37.3% vs 26.4%,  $p=0.004$ ) were significant associated factors in the univariate analysis.(17)

Obesity as a risk factor for hemorrhoids and study also found a significant association between hemorrhoids and obesity. Increased intra-abdominal pressure in an obese person with high body fat and visceral fat is thought to provoke venous congestion of distal rectum and, thus, contribute to the development of haemorrhoids.(12)

### **Family History**

In present study 16.4% patients had family history of hemorrhoids.

According to Graham Stewart's theory of familial tendency of hemorrhoids indicates that due to generalized weakness of venous walls due to hereditary predisposition.(4)it is also related to similar lifestyle and dietary habits.

### **Diet**

In present study dietary habit of 30.8% was purely vegetarian while 69.2% patients were having mixed, vegetarian and nonvegetarian diet in their meals.

Seventy-five percent of cases were on mixed diet, low on fibre, which was mostly non-vegetarian. Similar to studies which showed, the close relationship of IDs with Western type of diet which is more refined and low in fiber.(4)

Factors significantly associated with haemorrhoidal crisis were: past history of haemorrhoidal symptoms, age < 50 yrs, past history of anal fissure, occupational activity and recent unusual events: spicy diet, constipation, physical activity, alcohol intake.(11)

### **Pregnancy**

In present study 22.9% females out of 118 were more than 3 gravida i.e multi gravid. Thought the number of pregnancy is thought to be associated with hemorrhoids.

In a study the number of pregnancies was not associated with hemorrhoids in our pregnancy-related intra-abdominal change in a woman with higher number of pregnancy may further increase the risk of hemorrhoids. We think this is because our study might have included women who have experienced abortions and thus have relatively shorter period of pregnancy than expected based on their total number of pregnancies. To clarify this issue, further study is necessary to evaluate the relationship between the number of full-term pregnancies and haemorrhoids.(12)

### **Symptoms**

Bleeding per rectum was noted by R. S. Rai and K Rupkumar(10) as commonest symptom.

In O. J. Traynor and A. E. Carter study common complaints were bleeding P/R, mass P/R and painful defecation probably because of advanced haemorrhoids.(21)

Pain in our study was 22.4% also in 15% in David Marshmans.(19) Murie *et al.*(61) and Steinberg (20) had 46% and 43% respectively. Arabi *et al.* had a maximum about 62% pain.

Irritation/ Itching in the present study was in 31.2% patients comparable to Arabi *et al.* and Steinberg(20) whereas Murie *et al.*(61) had very high of 56% and Marshman(19) had a very low of 3%.

The percentage of patients with discharges was 22.4% comparable to Arabi *et al.*(42) with 29% and Steinberg (20) with 23% whereas Murie *et al.* (18) had a maximum of 58%.

As the name hemorrhoids, implies bleeding is the principal and earliest symptom. Bleeding is probably due to trauma to the mucosa and the underlying capillaries to the lamina propria due to hard faeces or following prolapse due to friction or contact with clothes. Subsequently, formation of friable granulation tissue may be responsible.

Prolapse is a much later symptom, to start with protrusion is slight and occurs only at stool and reduces spontaneously as time progresses it does not reduce spontaneously but have to be replaced digitally. Still later prolapse occurs during day often during exertion and may go on to become permanently prolapsed.(17)

A mucoid discharge is a frequent accompaniment of prolapsed hemorrhoids. It is composed of mucous from engorged mucous membrane sometimes augmented by leakage of ingested liquid paraffin. Pruritus almost certainly follows the discharge with excoriation of perianal skin with accompanying discomfort.

### **Anemia**

In 250 patients 9.6% were referred for secondary cause of anemia and were also having the symptoms suggestive of hemorrhoids. 76.4% patients were anemic in present study suffering from hemorrhoids.

Less than 10 gms% hemoglobin was found in 30% patients with hemorrhoids by Rai and Rupkumar in their study.(10) Present study shows 76.4% patients having hemoglobin < 10 while, 10% patients were having hemoglobin below 6 gm/dl i.e. severe anemia.

As majority of patients coming to our institute are belongs to tribal population, they seek medical attention during late course of disease, in this study anemia is most common finding.

### **Grade of Hemorrhoids**

In present study maximum patients having Hemorrhoids in present study i.e. 47.5% had Grad 3 hemorrhoids, 24.2% had Grade 2 while 8.7% had Grade 1 hemorrhoids. Also 19.6% patient had Grade 4 hemorrhoids on proctoscopy examination. Traynor and Carter in their study had 20.8% patients of Type II and 79.2% of Type III haemorrhoids.(21)

In 277 patients (72.89%), hemorrhoids were classified as grade I, in 70 patients (18.42%) as grade II, in 31 patients (8.16%) as grade III, and in 2 patients (0.53%) as grade IV.(48)

### **Complication of Hemorrhoids**

In present study 19.2% patient had complicated hemorrhoids. It was noted that 7.2% had prolapse, 2% had thrombosed hemorrhoids and 10% had hemorrhage due to hemorrhoids. Bleeding mainly occurs externally but it may continue internally after hemorrhoids has retracted in which case rectum is found to contain blood. Occasionally it can lead to severe anemia.(11)

Due to secondary anemia, in addition to local symptoms, patients may complain of breathlessness on exertion, dizziness on standing, lethargy and pallor due to increasing anemia.(18)

A mucoid discharge can occur in any case with prolapsing piles. It is more severe in 4th degree haemorrhoids.(18)

Irritation of perianal skin in 3rd degree hemorrhoids because of discharge, keeps perianal region moist. Severe pain may occur if the piles become thrombosed and prolapsed.

However, educational level, alcohol consumption, physical activities, diabetes mellitus, hypertension, fiber, fat intake, and energy intake were not associated with a risk of haemorrhoids.(12)

The inconsistency in the prevalence of hemorrhoids between studies could be caused from the different distribution of age, sex, and ethnicity of study subjects as well as the definition and diagnostic method for hemorrhoids.

Pagots in his epidemiological study had found hemorrhoids are significantly associated with haemorrhoidal crisis: past history of haemorrhoidal symptoms, age<50 yrs, past history of anal fissure, occupational activity (OR 5.17; 1.95; 1.72; 1.43; P<0.1) and recent unusual events: spicy diet, constipation, physical activity, alcohol intake (OR 4.95; 3.93; 2.79; 1.99; P<0.1).(6)

### **Summary**

In the present hospital based study of the evaluation of epidemiology of hemorrhoids in 250 patients it was found that:

1. The prevalence of hemorrhoids in the tribal patients attending OPD was 7.7%.
2. The Age range was between 24 to 72 years with mean age of 50.6 years,
3. Maximum patient's i.e. 60% were within 41 to 60 years age group,
4. Male to female ratio was 53:47. More males suffering from hemorrhoids than females,
5. 52.8% patients having hemorrhoids were engaged in heavy work
6. Socio-economic status of maximum patient's i.e. 69.2% was of lower class, none of the patient in our study was from upper socio economic class.
7. 16.4% had history of hemorrhoids in their family with either father or mother suffering from hemorrhoids.
8. Most common complaint was bleeding per rectum noted in 90.4% patients,
9. 36% patients having hemorrhoids had chronic constipation, 44.8% had history of straining for stools,
10. 11.2% patients were obese, 10% had central obesity, and 22.9% were more than 3 gravida
11. 69.2% patients were having mixed diet,
12. 76.4% had hemoglobin less than 10gm/dl while 9.6% patients were referred for secondary cause.
13. 93.6% patients were having internal hemorrhoids, 4% external and 2.4% mixed types.
14. Grade III hemorrhoids was noted in maximum patients i.e. 47.5%,
15. 19.2% patients presented with complications, most common being hemorrhage.
16. There was statistically ( $p>0.05$ ) no difference of age, family history, presenting complaints, bowel habits and obesity in between sex of patients with hemorrhoids.

### **CONCLUSION**

As the institute where study is conducted situated in tribal area, most of the patient presenting to institute are belonging tribal population.

On conclusion of the study following interference can be made.

1. The prevalence of hemorrhoids in the tribal patients attending OPD was comparable with the urban.
2. Middle aged patients were more common with mean age of 50.6 years.
3. Prevalence of hemorrhoids was seen more in males than females.
4. There was no statistical difference between males and female according to age group.
5. Most of patients having hemorrhoids were engaged in heavy or moderate work, so raised intrabdominal pressure may plays major role in etiology of hemorrhoids.
6. Socio-economic status of maximum patient's was of lower class, none of the patient in our study was from upper socio economic class. This might be because of prolonged standing and erect posture.
7. No significant positive family history present.
8. Most common presenting complaint was bleeding per rectum noted in the patients. No difference was seen between males and females.
9. 36% patients having hemorrhoids had chronic constipation, 44.8% had history of straining for stools,
10. Increase BMI, central obesity, more than 3 gravida does not show any significant effect on pathogenesis of hemorrhoids.
11. Mixed diet was common in patients.
12. Most of the patients were having anemia on time of presentation. Some patients are also referred to our OPD as cause of anemia. So patients in this population do not seek early medical attention.
13. Internal hemorrhoids more common than external and mixed types.
14. Grade III hemorrhoids was noted in maximum patients.
15. Hemorrhage being most common complication, patients avoid to seek medical attention may be because of social stigma or lack of awareness.
16. Education status of maximum patients was up to primary.
17. There was statistically ( $p>0.05$ ) no difference of age, family history, presenting complaints, bowel habits and obesity in between sex of patients with hemorrhoids.

As anemia secondary is complication in the hemorrhoids early intervention and health education to create awareness of risk factors causing the hemorrhoids and control them

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