

Gastrointestinal Stromal Tumour: Retrospective Study in a Tertiary Care Hospital

Sasmita Kumari Sethi¹, Bhuban Mohan Das², Alphonse Jithin J.³, Nihar Ranjan Pradhan³

¹Assistant Professor, department of Surgery, SCB Medical college and Hospital, Cuttack.

²Associate Professor, Dept. of Surgery, SCB Medical college and Hospital, Cuttack.

³Junior Resident, SCB Medical college and Hospital Cuttack.

Received: March 2019

Accepted: March 2019

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ABSTRACT

Background: Aim: Now GIST is recognised as the most common mesenchymal tumour of the GI tract, though until recently this clinical entity was ill defined. The aim was to study the incidence mode of clinical presentation, type of surgery and histopathological study of the tumour. **Methods:** This study was carried out on 40 patients at SCB Medical College, Cuttack, Odisha. **Results:** Incidence sex and anatomical site affected, is nearly same to international statistics. **Conclusion:** Highest incidence of GIST is in between 50-60 years with male predominance. Most of the patients were resectable with spindle type as the most common histological type.

Keywords: GI tract, GIST.

INTRODUCTION

Gastrointestinal stromal tumours (GISTs) are rare neoplasm arising from the wall of GI tract. It constitutes 1-3% of all gastrointestinal tumours. About 80% of mesenchymal tumour of gastrointestinal tract are GISTs. According to all available data the incidence of GISTs are nearly equal in all countries.

Epidemiological studies evaluating large patient cohorts revealed a median age of 53-65 years at the time of tumour diagnosis with less than 10% arising before the age of 40. Although sporadic cases in infancy and adolescence were observed, 30% of patients were above the age of 50 when diagnosed with GISTs. Over all data suggest a slightly higher incidence in men than in women with a distribution of about 55% to 45%. Numerous asymptomatic cases of GISTs remain undetected is supported by the detection of 2 GISTs per 1000 autopsies performed with the actual number estimated to be much higher.

MATERIALS AND METHODS

This is a retrospective study done at SCB medical college and hospital, Cuttack, Odisha. A total of 40 patients data were collected from the medical

records of various surgical units and dept of pathology from October 2015 to June 2018.

We include all patients who are diagnosed to be a case of GIST by radiological and histopathological study. Paediatrics patients less than 12 years of age are not included.

In this way we selected 40 patients. These patients were undertaken to investigate distribution of age and sex mode of presentation, histopathological types with tumour size and type of surgery and grading of tumour were analysed retrospectively.

RESULTS

A total of 40 patients were included in this study. Of them 23(57.5%) were male and 17(42.5%) were female. Males outnumber females. M: F ratio 1.35. The age of the patients vary between 50-60 years. As none of the patients in our study were below 20 years and hence not included in the table. The mean age is around 55 years.

Table 1: Age distribution of patients.

Age group	Number	Percentage
20-30	01	2.5
31-40	03	7.5
41-50	11	27.5
51-60	21	52.5
61-70	04	10

The maximum numbers of patients is 21(21 out of 40) were in the age group of 51-60 years.

Name & Address of Corresponding Author

Dr. Sasmita Kumari Sethi
Assistant Professor
Qr no 3R/15, Doctor's flat
Near AHRCC
SCB Medical campus
Cuttack, Odisha 753007.

Regarding the clinical presentation of GISTs in our study the most common symptom is pain abdomen 30(75%), followed by malena in 18(45%). The less common symptoms are palpable mass, hematemesis, intestinal obstruction and perforation. Not a single patient had any history of previous gastric surgery.

Table 2: Presenting symptoms.

Symptoms	Number	Percentage
Abdominal pain	30	75
Hematemesis	06	15
Malena	18	45
Palpable mass	12	30
Intestinal obstruction	03	7.5
Perforation	01	2.5

We worked up the case by doing lab tests, chemistry profiles and other radiological investigations. As shown in table -3 incidence of GIST of Stomach outnumbers the GIST of Jejunum, Ileum and Colon. The incidence of GIST of stomach 24 (60%) is followed by GIST of jejunum 10(25%), Ileum 4 (10%) and Colon 2 (5%).

Table 3: Anatomical sites

Site	Number	Percentage
Stomach	24	60
Jejunum	10	25
Ileum	4	10
Colon	2	5

Among 40 patients 33(82.5%) were found to be operable and 7(17.5%) were inoperable. In operable cases i.e. from 33 patients total gastrectomy in 6(18%) and subtotal gastrectomy in 9(27%) and wedge resection in 8(24%) was done in GIST of stomach. Resection and anastomosis was done in 10 patients.

Table 4: Types of surgery

Surgery	Number	Percentage
Total gastrectomy	06	18
Subtotal gastrectomy	09	27
Resection and anastomosis	08	24
Wedge resection	10	25
Unresectable metastatic diseases	07	17.5

Regarding the size of the tumour majority have size between 6-10 cm is 21(52.5%) and size 2-5 cm was 13 (32.5%) and size of >10cm is 6(15%).

Table 5: Size of tumours

Size (In CM)	Number	Percentage
2-5	13	32.5
6-10	21	52.5
>10	06	15

Table 6: Post-operative complications.

Complications	Number	Percentage
Upper GI bleeding	Nil	0
Anastomotic leakage	Nil	0
Duodenal blowout	Nil	0
Pulmonary complication	02	05
Wound infection	03	7.5
In hospital stay	10 (Median)	25

In our series no significant post operative complications occurred. Pulmonary complications occurred in 2(5%) patients and wound infection occurred in 3(7.5%) patients. All these complications are managed conservatively.

From the histopathological study and according to size of tumours and mitotic activity most of the patients 16(40%) are in the low risk group and 12(30%) in the intermediate and 12(30%) are in the high risk group.

From the histological types obtained in our study most common type was spindle cell type 24(60%) followed by mixed type 9(22.5%) and the least common was epitheloid type seen in 7(17.5%) of cases.

Table 7: Histological type of tumour

Histological type	Number	Percentage
Spindle type	24	60
Mixed type	09	22.5
Epitheloid type	07	17.5

DISCUSSION

Although rare gastrointestinal stromal tumours (GISTs) are the most common mesenchymal tumour of the GI tract with an estimated annual incidence of approximately 6000 cases per year. Because of enhanced diagnostic specificity and understanding of the patho physiology and natural history of the disease novel treatment approaches have resulted. Initially thought to be smooth muscle tumour have distinctive pathologic features as suggested by Mazur and Clark who introduced the term stromal tumour.

Usual age of presentation in adults is around 50 to 80 years as shown in various studies with a mean age of 60 years. In our study it is mostly around 50-60 years with a mean age around 55 years, which is nearly same to international statistics.

G Tryggvason et al showed male predominance compared to females, but B Nilsson et al showed same incidence in males and females. In our study males outnumber females and the male female ratio is 1.35.

In our study the most common presentation was abdominal pain 75% followed by upper GI bleed 15%, perforation was the least common presentation. Li J et al in his study of 112 cases reported an equal incidence in abdominal pain and upper gastrointestinal bleeding of 31.3% and was the most common presentation in his study. K.R Gilmore et al in his study reported abdominal pain as the most common symptom. In the present study 82.5% of cases were resectable and 17.5% were unresectable with or without metastasis. P Bucher et al reported in his study that 94% of cases presented with localised disease. 6% blood borne metastasis with or without lymph node invasion and 90% cases were resectable which is comparable to figures in the present study.

In our study most common site of GIST was stomach(60%) followed by Jejunum (25%) and Ileum (10%).These findings are in agreement with the data provided in recent studies, Which estimate gastric involvement at 55-65%. The second most frequent location is the small intestine ,preferably jejunum (25-30%). In our study no case were documented in mesentery, Omentum, retroperitonium and oesophagus.

In the series by Fujimoto et al of 140 patients with gastric GISTs, 3.5% required total gastrectomy, 27.9% had a subtotal gastrectomy and the majority 67.8% were sufficient with atypical gastrectomy.

In our study the most common operation done was gastrectomy (total gastrectomy 18%, Subtotal gastrectomy 27% followed by wedge resection in 25%.

Kjetil Soreide et al in his study comprising of 122 patients with GISTs reported >5cm tumours accounts for 49% and <2cm tumours were about 13%.In our study majority of tumours have size between 2-5 cm 13 cases(32.5%) and incidence of 6-10cm sized tumours was 52.5 % i.e. 21 cases and that of >10cm was 15% i.e. 6 Cases. F F Diego et al in his study reported 69% of the GISTs with a size between 2 and 10 cm. In our study no case documented with tumour size <2cm.

M Niittinen et al reported in his study that three histological types can be distinguished according to the cellular appearance Spindle type (77%).Mixed cells(15%) and Epithelial type(8%).In our study also spindle type is the most common type(60%)

CONCLUSION

- The highest incidence of GIST in the present study was between 50-60 years and least common was below 20 years.
- Incidence were more common in males compared to females (M:F= 1.35)
- The most common presentation was abdominal pain (76%) followed by upper GI bleed (15%).
- The majority of GISTs were resectable at the time of diagnosis (82.5%).
- Most common site was stomach (60%) followed by jejunum (25%).
- Most common surgery performed was subtotal gastrectomy and wedge resection.
- Most of the tumours were in between 6-10 cm in size(52.5%) nearly more than half.
- Most of the tumours were of low risk (16patients=40%).Intermediate and high risk cases are nearly same.

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How to cite this article: Sethi SK, Das BM, Jithin JA, Pradhan NR. Gastrointestinal Stromal Tumour: Retrospective Study in a Tertiary Care Hospital. *Ann. Int. Med. Den. Res.* 2019; 5(3):SG07-SG09.

Source of Support: Nil, **Conflict of Interest:** None declared