



DIAGNOSIS AND MANAGEMENT OF GASTROINTESTINAL STROMAL TUMORS

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ABSTRACT **INTRODUCTION:** Gastrointestinal Stromal Tumor (GISTs) are rare tumors of the gut which arise from interstitial cells of cajal^{1,2,3,4}. They present with non-specific clinical features. Diagnosis is done with the help of cross sectional imaging, Histopathological examination and Immunohistochemistry (IHC). Surgical resection is the treatment of choice. Imatinib is used in recurrent, metastatic and unresectable cases.

MATERIALS AND METHODS: A total number of 50 patients were studied from 2013 to 2017. Preoperative diagnosis was made with the help of cross sectional imaging. Surgical excision was done as the primary treatment. Imatinib was given selectively in intermediate to high risk patients.

RESULTS: Out of the 50 patients studied, definite preoperative diagnosis was made 32(64%) of the patients. Wide local excision (22%) was the most common surgical procedure, followed by wedge resection (20%) and distal gastrectomy (18%). Wound infection (6%) was the most common postoperative complication. Adjuvant treatment was given in 42% of the patients and recurrence occurred in 12% of the patients.

CONCLUSION: GISTs are rare tumors of the gut. Diagnosis is made with the help of CECT. Surgical excision is the treatment of choice. Imatinib is given in high risk patients.

KEYWORDS : Gastrointestinal Stromal Tumor, GIST, Immunohistochemistry (IHC), CD117, Imatinib

INTRODUCTION:-

GISTs are uncommon tumors of the gut^{4,5}. They are mesenchymal in origin and arise from progenitor cells of interstitial cells of cajal^{1,2,3,4}. They affect males and females equally and develop in middle to elderly^{6,7}. The most common location is the stomach⁴ followed by small gut and colorectum⁸. Signs and symptoms are non-specific-usually Pain abdomen, Gastrointestinal bleeding and/or abdominal lump^{9,10}. Surgical excision is the treatment of choice. Imatinib is given in intermediate to high risk patients.

This study focused the diagnosis and management of such patients that came to the hospital.

MATERIALS AND METHODS:-

It was an observational type of the study carried out in the department of general surgery, Sher e Kashmir Institute of Medical Sciences, Srinagar. Prospectively patients with GISTs were studied from 2015 to 2018 and retrospective ly study was extended up to 2013. Medical records were obtained from Medical Records Section of SKIMS. Patients were observed regarding the surgical procedure done, recurrence if any and requirement of Imatinib. Patients were followed during their outpatient department visits over a mean period of 19.2 months. Total number of patients studied was 50.

RESULTS:-

Out of 50 patients preoperatively diagnosis could be confirmed only in 64% on the basis of HPE. CECT was the diagnostic modality of choice showing homogeneous to heterogeneous. Surgical excision was the carried out in all patients. Tumor was removed keeping at least 1 cm gross margin. Lymphadenectomy was not performed. Different procedures were carried out depending upon the site and the size. Various procedures that were done in our patients are listed in the table 1.

| Surgical Procedure | No. of patients (n) | Percentage (%) |
|------------------------------------------------|---------------------|----------------|
| Wide Local Excision (WLE) | 11 | 22 |
| Wedge resection of stomach GIST | 10 | 20 |
| Distal gastrectomy | 9 | 18 |
| Laparotomy with excision of GIST | 6 | 12 |
| Resection anastomosis of gut (small and large) | 8 | 16 |

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|-------------------------------------------|---|---|
| Orringer's esophagectomy | 2 | 4 |
| Pylorus Preserving Pancreato Duodenectomy | 2 | 4 |
| Right hemicolectomy | 1 | 2 |
| Upper partial gastrectomy | 1 | 2 |

Postoperative complications were wound infection (6%), bleeding (4%) and anastomotic leak (2%). Imatinib was given to 42% of the patients who belonged to intermediate to high risk as per Miettinen lasota classification. A total number of 24 (48%) patients had recurrence. 17 patients belonged to high risk and 7 patients belonged to intermediate risk. There was no recurrence in very low risk to low risk patients.

DISCUSSION

GISTs are the most common mesenchymal tumors of the GI tract^{4,5}. They arise from interstitial cells of cajal. They vary from small asymptomatic^{11,12} to large tumors that present with non-specific signs and symptoms like abdominal pain, Gastro-Intestinal bleeding abdominal lump and intestinal obstruction^{9,10,13,14}. Preoperatively they are diagnosed on the basis of cross sectional imaging like CECT¹⁵. On CT, these tumors have homogeneous to heterogeneous appearance depending upon the size and intra tumoral bleeding and extension. Preoperative biopsy is not mandatory for excision and is often negative as the tumors are submucosal^{14,16}. Endoscopic Ultrasound helps in the diagnosis and increases the sensitivity of biopsy. Surgical excision is often the treatment of choice. It can be open or laparoscopic¹⁷. Excision is done obtaining at least 1cm of tumor free margins. Wedge resection is done in stomach if tumor is small otherwise partial or total gastrectomy may be needed. In small gut resection anastomosis is the most appropriate surgical procedure. Complexity of the surgical procedure depends upon the location of the tumor. Whipple's procedure may be required in Duodenal GISTs. Lymphadenectomy is not favored as lymph node involvement is rare^{18,19}. Lymphadenectomy and metastatectomy has not been shown to improve survival and such patients are managed using Imatinib. Imatinib is a tyrosine Kinase inhibitor and is used as 400 mg daily dose for 1-3 years in intermediate to high risk patients. Patients with recurrence are subjected to redo surgical excision if negative margins can be attained followed by Imatinib treatment. Those patients who do not show response to 400 mg daily dose of Imatinib are put on 800mg per day of Imatinib (dose escalation). If, again, there is failure of treatment Imatinib is changed to sunitinib. Risk of recurrence is determined by the size, site and mitotic index of the tumor^{15,8,20}. Prognostic risk is classified as very small (<2cm, <5 mitosis/50 high power fields), small (2-5cm, <5

mitosis/50 high power fields), intermediate (5-10cm, <5 mitosis/50 high power fields) and high risk (>5cm+ >5 mitosis/50 high power fields, >10cm, >10 mitosis/50 high power fields). Very low to low risk patients constitute about 40-50% of the patients whereas intermediate occurs around 15-20% and high risk patients about 30-40%. Very few patients from very low to low risk patients recur whereas recurrence in intermediate to high risk patients is very high approaching 50-60%^{21,22}. Life span is near normal in very low risk to low risk patients whereas the overall survival is 19 months in metastatic and 12 months in patients with local recurrence²³.

CONCLUSION:-

GISTs are uncommon mesenchymal tumors of the gut. They present with non-specific signs and symptoms. Preoperatively, CECT is the diagnostic modality of choice. Surgical excision offers complete cure in low risk patients. Lymphadenectomy is not done. Imatinib is given in intermediate to high risk patients. Recurrences are common in intermediate to high risk groups.

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