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Background and Aim: There is limited published information on gastrointestinal stromal tumors (GIST) in the South Asian region. This study was conducted to describe the demographic characteristics, organ distribution and frequency of risk categories in cases of GIST referred to a tertiary hospital. Methods: Data pertaining to 37 cases of gastrointestinal stromal tumors received at the histopathology section of the Aga Khan University Hospital between December 2004 and July 2005 were analyzed. Immunohistochemical stains including vimentin, CD34, CD117 (c-kit), ASMA, desmin and S-100 were performed. Results: Of 37 tumors, 24 (64.9%) were from males. The mean age of the patients was 50.0 years (95% CI 45.3-54.6). Tumors were categorized as high risk (27 cases; 69.2%), intermediate risk (4 cases; 10.3%) and low risk (3 cases; 7.7%). The most common site of involvement was the stomach (29.7%), followed by small bowel (24.3%), mesentery (10.8%), pancreas (8.1%), rectum (2.7%) and retroperitoneum (2.7%). In 21.6% of cases, the site of origin was not specified. The mean age at diagnosis was 50.9 years (95% CI 45.5 – 56.3) in the high risk and 44.8 years (95% CI 28.6 – 60.9) in the intermediate risk category. Conclusions: Cases of GIST referred to us were more frequently from men, most commonly from stomach or small bowel, mostly in the high risk category, and presented a decade earlier than in other reported series. [Indian J Gastroenterol 2007;26:214-216]
and/or alpha smooth muscle actin (Dako Cytomation, Denmark), by Envision technique. Parameters such as age, sex, tumor size, site, mitotic count, and differentiation were recorded. The tumors were graded as high, intermediate or low risk based on tumor size and mitotic count.11

**Results**

Twenty four of 37 (64.9%) cases were observed in men. The mean age was 50.0 years (95% CI 45.4 – 54.7), being slightly higher in males 51.3 years (95% CI 46.5 – 56.1) than in females 47.6 years (95% CI 36.8 – 58.5; p=ns). The most commonly recorded presenting symptom was abdominal mass, followed by melena and abdominal pain. Other presenting symptoms included intestinal obstruction, dysphagia, vomiting/hematemesis and fever. The most common site of lesion was the stomach (n=11, 29.7%), followed by small bowel (9, 24.3%; duodenum and ileum [2 each], jejunum [1], small bowel site unspecified [4]). The other sites were pancreas (3), rectum, (1) retroperitoneum (1), and mesentery (4). In 8 (21.6%) cases, the exact intra-abdominal site was not specified. Most of the cases (29) were resection specimens, i.e., partial or complete gastrectomy and intestinal resection. In the rest, the specimen received was either as small biopsies or tissue sent for second opinion, in which the mode of surgery was not known. Tumor size ranged from 2-40 cm (mean [SD] 14.9 [9.9]). In five specimens the tumor was received in multiple fragments with a size of >10 cm in aggregate. In three cases, the biopsy size was 5 mm or less; in the remaining 13 cases the size was not known.

Of the tumors received, 27 (69.2%) were classified as high risk, 4 (10.3%) as intermediate risk and 3 (7.7%) as low risk. The low-risk cases that were identified in our study were mostly incidental findings; for example, one low-risk case was incidentally identified in a gastrectomy performed primarily for adenocarcinoma stomach. Three (7.7%) cases could not be graded due to the small size of the specimen and inadequate clinical information regarding size of the tumor. The mean age of patients in the high-risk category was 50.9 years (95% CI 45.5 – 56.3) and the male:female ratio was 1.7:1. The age in the intermediate-risk category was 44.8 years (95% CI 28.6 – 60.9) and male:female ratio was 3:1.

Immunohistochemistry showed diffuse strong positivity for vimentin, CD117 and CD34 in 32/33 (96.9%), 31/35 (88.5%) and 23/30 (76.6%) cases, respectively. Alpha smooth muscle actin and S-100 protein were negative in most of the cases, i.e.,17/20 (51.5%) and 20/30 (66.6%), respectively.

**Discussion**

GIST has evolved as a separate entity among gastrointestinal mesenchymal neoplasms. It represents a morphologically heterogeneous group of tumors, which were once thought to be a poorly-defined pathologic oddity; it has emerged in recent years as a distinct entity with specific histogenesis.12 In the present study, male predominance was observed, which is comparable with some studies,14 although others showed an equal male:female ratio15,16 or even a slight female predominance of 1:1.2.17 Most of our patients were in the age range of 23 to 70 years, with mean age at diagnosis being 50 years. This is a decade earlier than in other studies, in which the mean age ranged from 59.2 years to 63 years.14,15,18 As in other studies,14,15,18 stomach and small intestine were found to be the two sites commonly involved by the tumor.

Most of our cases were in the high-risk category. These results are similar to one study by Oroz et al.14 Other studies show no such high incidence of high-risk categories. This bias may be because our center, being a tertiary care institute, received more complex and large specimens. The low-risk cases that were identified in our study were mostly incidental findings.

In summary, GIST needs to be recognized as a separate entity and CD117 staining of any mesenchymal lesion of GI tract should be mandatory for accurate classification. Further studies will be needed to determine the correlation between various morphological criteria and risk of metastasis, and survival and mortality rates in these patients.

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