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Gastrointestinal Stromal Tumors About an Epidemiological Survey

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1. Abstract

We carried a descriptive retrospective study over a period of 5 years from January 2016 to January 2021, in our hepato-gastroenterology department at the CHU Mohammed VI Marrakech.

The aim of this study is to report on the epidemiological, clinical, histological and therapeutic characteristics of GISTs and to report the rare localizations of these tumours.

2. Introduction

Gastrointestinal Stromal Tumors (GIST) are rare connective tissue tumors, usually sporadic, most often located in the stomach and small intestine. They are the most common mesenchymal tumors of the gastrointestinal tract. They develop from specialized cells found in the gastrointestinal tract, called interstitial cells of Cajal (ICC) or the precursors of these cells. An oncogenic mutation in the KIT genes, coding for tyrosine kinase receptors, is found in approximately 85% of adult GISTs. They are most often found in the stomach (50-70%) and the small intestine (20-30%). Other rare digestive and extra-digestive localizations have been reported.

3. Patients and Methods

This is a descriptive retrospective study over a period of 5 years from January 2016 to January 2021, carried out in our hepato-gastroenterology department at the CHU Mohammed VI Marrakech.

4. Results

We collected 28 patients, there were 18 men (62.4%) and 10 women (35.8%) The average age was 53.6 years with a slight male predominance with an average age of 57 years with extremes of between 32 and 82 years old. The clinical symptomatology was dominated by epigastralgia in 89.2% of cases, deterioration of general condition in 82.1% of cases, upper digestive hemorrhage in 62.4% of cases. An abdominal mass was identified in 2 patients, i.e. 7.1% of cases with an average delay of 11 months. Four patients were metastatic at the time of diagnosis, i.e. 14.2% of cases. The most common site was the stomach in 67.8% and the small intestine in 28.5% of cases. There are also rare localizations such as the rectum in 2 cases or 7.1% of cases. The average tumor size was 8 cm (1 to 15 cm). The predominant endoscopic appearance was a regular submucosal nodule without mucosal lesion. Endoscopic biopsies were mostly negative in 89.2%. Surgical treatment was indicated in 82.1% of cases and chemotherapy in 17.9% of cases.

5. Discussion

Gastrointestinal stromal tumors or GIST are rare tumors: 1 to 3% of gastrointestinal malignancies. These are proliferations of cells, most often fusiform, sometimes epithelioid, rarely pleiomorphic arising in the muscularis of the digestive tract and expressing CD117 or C-kit in 90-95% of cases, NSE in 85-90% and CD44 in 60-80%. Indeed, there are rare exceptions, representing a maximum of 5% of cases, where the C-kit protein is not detectable by immunohistochemistry. These tumors can be called GIST C-kit negative. GIST tumorigenesis involves two receptors: C-Kit and PDGFR. Mutations in these receptors are heterozygous gain-of-function type. The gene coding for the C-kit protein can be the site of mutations in 85% of cases and which are preferentially juxta membrane, can also affect the extracellular region of the protein more rarely other sectors of the protein, as for the PDGRF gene sa mutation is less common (10-15%). In our series, the mutational profile was not studied in any of our pa-

tients. Stromal tumors are rare before the age of 40 and exceptional in children with an average age of discovery between 55 and 65 years. There is no clear predominance of sex, only certain studies find a discreet male preponderance with a sex ratio close to 1.5. These data agree with the results of our series where the average age is 53.6 years and the male/female sex ratio 1.8.

GISTs can be located throughout the digestive tract. Indeed, gastric GISTs represent the 1st localization, the small intestine is the second localization. Stromal tumors are asymptomatic for a long time, making their incidental discovery frequent. Except in our series, only 2 cases were discovered by chance. This could be justified by the time taken for symptom development before the first consultation, which is on average 11.2 months (0-72 months). The discovery at a metastatic stage was similar in our series to that reported by the literature with respectively 14.2% and 12-25% of cases. In our series, pain was the main symptom (89.2%) followed by deterioration of the general condition in 82% of cases. However, the review of the literature finds that digestive haemorrhages are most often indicative of GIST (48% of cases) as for pain, its frequency does not exceed 36% of cases. The other functional signs depend closely on the seat of the tumour.

Any GIST is considered potentially malignant and should therefore theoretically be respected. Lymphatic dissection in GISTs is not performed systematically because, as with other sarcomas, GISTs are not very lymphophilic: the rate of lymph node invasion is usually less than 10% and the risk of lymph node recurrence less than 5%. Unlike other sarcomas, there is no consensus on whether or not preoperative diagnosis by puncture-biopsy (by endoscopic, percutaneous or operative ultrasound) is necessary in the event of a resectable tumour. Surgical treatment of a gastrointestinal stromal tumor must be macroscopically complete, without tumor invasion and with healthy margins while favoring functional excision. Indeed, the edges of excision must be free of tumor infiltration, but there is no consensus on the safety distance necessary between the edge of the tumor and the slice of surgical section. However, a margin of 1 to 2 cm is generally considered sufficient. When the lesion is resectable, neoadjuvant treatment with Imatinib is not indicated, however, Imatinib may be indicated after multidisciplinary consultation when it is estimated that it can modify the surgical procedure by simplifying surgery or allowing less mutilating resection (sphincter preservation for the rectum for example). In our series, surgery was performed in 82% of cases [1-9].

6. Conclusion

Gastrointestinal neuroendocrine tumors, even if rare, constitute an important cause of mortality from digestive cancer, surgical treatment and the treatment of choice in the event of a resectable tumor in an operable patient. Imitinib remains an important alternative for metastatic forms escaping treatment. Meanwhile, in our context, the socio-economic level constitutes a real obstacle for the clinician limiting the quality of therapeutic care. However, considerable efforts are underway to improve access to targeted therapies for low-income patients.

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