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Retrospective Study

Gastrointestinal Stromal Tumors about an Epidemiological Survey

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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.

Keywords: *Gastrointestinal Stromal Tumors (GIST); Kit Gene; PDGFRA Gene*

Introduction

Gastrointestinal stromal tumors (GIST) are rare connective tissue tumors, usually sporadic, most often located in the stomach and small intestine. They represent the most common mesenchymal tumors of the digestive tract. They develop from specialized cells found in the gastrointestinal tract, called interstitial cells of Cajal or the precursors of these cells. in the majority of cases, around 85% of cases, the mutation of the Kit gene or the PDGFRA gene which codes for the tyrosine kinase receptors is objectified. They are most often located in the stomach in 50 to 70% of cases and in the small intestine in 20 to 30% of cases. Other rare digestive and extra-digestive localizations have been reported.

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.

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.

Discussion

Gastrointestinal stromal tumors or GIST are a rare entity and represent only 1 to 3% of gastrointestinal tumors. they are characterized by cell proliferation, fusiform, sometimes epithelioid, rarely pleiomorphs which emerge in the muscular layer and which can express CD117 or C-kit in 90 - 95% of cases, NSE in 85 - 90% and CD44 in 60 - 80%.

On the other hand, there remain rare cases, around 5%, where the search for Ckit protein by immunohistochemistry was negative. 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 that codes for the C-kit protein can be mutated in 85% of cases and these mutations are often juxta-membrane but can also involve the extracellular segment of the protein and exceptionally other sectors of the protein, such as the case of the mutation of the PDGRF gene which remains rare 10 to15%. In our series, the mutational profile was not studied in any of our patients. 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, whereas in the articles of the literature, gastrointestinal bleeding is the first mode of revelation in 48% of cases, followed by pain in 36% of cases. The other revealing symptoms essentially depend on the site of the tumour.

Any GIST is considered potentially malignant and should therefore theoretically be resected. 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 sarcomatous tumors, there is still no consensus on whether or not ultrasound-guided or percutaneous or even surgical needle biopsy is indicated for tumors that are immediately resectable. When surgical resection of the tumor is considered, the resection should be macroscopically complete with healthy resection margins. 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 tumor is resectable, preoperative treatment with Imatinib is not necessary, therefore the decision to treat with imatinib must be taken in multidisciplinary consultation when the staff deems its use essential for a less mutilating resection and less complications. In our series, surgery was performed in 82% of cases [1-9].

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. Imatinib 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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