Summary

GISTs are a subset of mesenchymal tumors and represent the most common mesenchymal neoplasms of GI tract**(Agaram,et al.2007)**

They account for <1% of all GI tumors. Their origin was at first attributed to Cajal's cells, in mesodermal tissue but it has nowadays been recognized that GISTs arise from multipotential mesenchymal stem cells **(Joensecu 2006).**

Gastrointestinal stromal tumor (GIST) is now defined as a specific, immunohistochemically KIT-positive mesenchymal neoplasm of the gastrointestinal (GI) tract and abdomen. GISTs constitute a majority of GI mesenchymal tumors. Pathologic activation of KIT signal transduction appears to be a central event in GIST pathogenesis **(Heinrich, et al.2003).**

The incidence of GIST is estimated to be approximately10-20 per million people, per year. Malignancy possibility is 20-30%. However, the precise incidence of GIST is unknown because of the incomplete definition and classification **(Tran,et al.2005).**

GISTs occur in both sexes with similar frequency, but several reported data have shown a preponderance in males, generally after the fourth decade, with most studies finding a mean age at diagnosis of _60 years. They are occasionally found in young adults, although extremely rare in children (**Corless, et al.2002).**

Such tumors may occur anywhere in the GI tract but are most commonly found in the stomach (4%–70%) and small intestine (20%–40%). Only 5%–15% are found in the colon and rectum, _5% in the esophagus and in the omentum and rarely in the mesentery or retroperitoneum **(Rubin ,et al.2001).**

Grossly, GISTs vary greatly in size, ranging from 1–2 cm to >20 cm in diameter. Upon gross examination, an untreated GIST is in most cases a friable mass that appears to arise in the muscle rather than in the epithelium of the GI tract; the tumors are often well circumscribed and unencapsulated, although a pseudocapsule may occasionally be seen. Large tumors may show cystic degeneration, necrosis and focal hemorrhage and may rupture at the time of surgical resection. Although extraluminal in origin, GISTs may ulcerate through the overlying mucosa (**De Silva ,et al.2003)**.

Microscopically, 70% of GISTs appear as spindle cell tumors,20% are epithelioid in appearance with the remainder having either a mixed spindle/epithelioid cell appearance or occasionally a carcinoid-like/paragangioma-like appearance **(Fletcher,et al.2002).**

The clinical signs of GISTs are very variable and depend on the localization and the size of the tumors. Those with intestinal localization are smaller than those of the stomach. Small size GISTs are discovered incidentally, by means of imagistic examination,endoscopy or during a surgical intervention for other causes (gallbladder, gynecological operations, surgical interventions for gastric or intestinal lesions) **(Emoke, et al.2008).**

Symptoms are related to the tumor mass (abdominal pain, discomfort, distension of the abdomen, palpable abdominal mass, occlusive syndrome) or to anemia (because of occult or manifest gastro-intestinal hemorrhage through mucosal ulcerations). In over 25% of the patients, the tumor rupture can cause acute hemorrhage of the intestinal tract or rarely in the peritoneal cavity. Less than 5% of GISTs are found as components of syndromes like: neurofibromatosis type I (NF I), Carney triad or familial GISTs syndrome (**Andersson, et al.2005)**

GISTs evaluation can be done with many imaging methods like: ultrasonography, computed tomography (CT), magnetic resonance imaging (MRI), positron emission transverse tomography (PETT). CT-scan can detect small intestinal tumors and guide the biopsy, is an accessible and sensitive method especially in case of liver metastasis valuation and also provides useful information about the response to the treatment and of the recurrence (**Rosenbaum,et al.2006).**

Biopsy is very important in diagnosis of GIST. It can be taken during endoscopy, and percutaneous under CT guidance or ultrasonography guidance. Biopsy is very important in locally advanced or metastatic GIST when chemotherapy is the first line of treatment. **(Kinoshita et al 2003)**

Surgical removal remains the only curative treatment for patients with GISTs. Tumor size, mitotic index, anatomic location, tumor rupture and disease-free interval are the classic features used to predict the clinical course of patients who undergo complete gross resection. Imatinib mesylate is a rationally designed, molecularly specific oral anticancer agent that selectively inhibits several protein tyrosine kinases central to the pathogenesis of human cancer which has demonstrated remarkable clinical efficacy in patients with chronic myeloid leukemia and malignant GISTs. More recently Sunitinib, a new KIT/PDGFRA

kinase inhibitor, has been tested in patients with GIST resistant to imatinib, with promising results (**Landi,et al.2006).**

The disease-specific survival rates of patients with malignant gastrointestinal stromal tumors (GISTs) is 69% at 1 year, 38-44% at 3 years, and 29-35% at 5 years. Median disease-specific survival is 60 months with primary disease, 19 months with metastatic disease, and 12 months with local recurrence **(De Matteo,et al.2000).**