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RESEARCH ARTICLE

CLINICAL CHARACTERISTICS OF GIST AND THE POSSIBLE ROLE OF SMOOTH MUSCLE ACTIN (SMA) AS A PROGNOSTIC FACTOR – INITIAL 5 YEAR EXPERIENCE IN A TERTIARY CARE CENTRE IN DAKSHINA KANNADA DISTRICT.

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Manuscript Info

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Abstract

A study about Gist - the most common mesenchymal neoplasm of the git in the population in a small district in Karnataka (India)

Introduction:-

- Primary mesenchymal tumors of the gastrointestinal tract are a heterogeneous group of tumors with a wide clinical spectrum, of which gastrointestinal stromal tumors (GIST) typically occur in middle-aged to older individuals.
- Most common mesenchymal neoplasm of the gastrointestinal tract.
- Has been frequently studied in tertiary care centres around the world and in India, but no long term study has been conducted in South Kannada district of Karnataka till now.

Objectives of the Study:-

- To observe
  - Modes of presentation.
  - Clinical course of gastrointestinal stromal tumours.
- To evaluate
  - Possible role of the marker Smooth Muscle Actin as a prognostic factor.

Gist In Brief:-

- Known presentations
- Management (surgical and chemo) (as short as possible)
- Defining feature of GIST is the expression of CD117, a marker of KIT activation, which is sensitive although not entirely specific
- Five percent of GISTs are known to be negative for CD117 (KIT protein),although they resemble KIT-positive GISTs by cytomorphology.

Why the trial with SMA as another prognostic factor?

- CD 117 stains many carcinomas and melanomas (lack of specificity) (http://surgpathcriteria.stanford.edu/gitumors/gist-gastrointestinal-stromal-tumor/differential-diagnosis.html)
- Expressed in both benign and malignant GISTs
- Activating mutations in the exon 11 of some c-kit genes, classified as high risk
- Overall 5 year survival rate of patients with KIT-negative GISTs supposedly lower than that of patients with KIT-positive GISTs

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- SMA tends to be positive in small bowel GISTs, and negative in rectal and esophageal GISTs (significance unknown)
- Long term studies regarding prognostic effects of SMA positivity not carried out

Subjects and Methods:-

- Observational study conducted in YMC
- From January 2011 to December 2015
- Presenting features and clinical course were noted
- Clinically suspected to be GIST – 25
- Out of which 17 were histopathologically confirmed to be GIST
- These 17 cases were subjected to immunohistochemistry – CD 117 and SMA

Results:-

- Clinical features:
  - Abdominal pain : 9
  - Abdominal mass : 6
  - Bleeding PR : 4
  - Dyspepsia and fullness of the abdomen : 3
  - Hematemesis : 2
  - Fever : 2
  - Vomiting : 2
  - Loose stools : 1
  - Weight loss : 1
  - k/c/o NHL : 1

- Location wise:
  - Small bowel: 7
  - Large bowel: 2
  - Stomach: 5
  - Omentum: 1
  - Pylorus extending on to duodenum: 1
  - Ileocecal junction: 1

- Histopathologically
  - Malignant: 8
  - Non malignant: 9

- Immunohistochemistry:
  - CD 117 positivity and SMA positivity: 9
  - CD 117 negativity and SMA positivity: 4
  - CD 117 positivity and SMA negativity: 3
  - CD 117 negativity and SMA negativity: 1
  - Total CD 117 positive cases: 12
  - Total SMA positive cases: 13
  - Total CD 117 negative cases: 5
  - Total SMA negative cases: 4

Relation between Malignant GIST and CD 117

- Malignant cases with CD 117 positivity: 5
  (total number of CD 117 positive cases: 12)
- Malignant cases with CD 117 negativity: 3
  (total number of CD 117 negative cases: 5)

Statistical significance

	Malignant	Nonmalignant	Total
SMA positivity	5	8	13
SMA negativity	3	1	4
Total	8	9	17

Fisher's exact test:

- The two-tailed P value equals 0.2941 The association between rows (groups) and columns (outcomes) is considered to be not statistically significant.

Conclusion:-

- Multiple possibilities in which patients can present.
- With the limited number of cases that we have encountered till now, the Fisher's exact test is not able to provide a correlation between SMA positivity and malignancy.
- With more number of cases being included and with the application of Chi square test, a correlation may be established in the future.