



CLINICAL AND LABORATORY EVALUATION OF GASTROINTESTINAL DISORDERS IN ELDERLY- A PROSPECTIVE STUDY.

Gastroenterology

**Dr. Sushilkumar
Dharamraj
Navsare***

MBBS, MD Medicine, Assistant Professor, ACPM Medical College, Dhule, Maharashtra India. *Corresponding Author

**Dr. Deepak Arun
Khore**

MBBS, MD Medicine, Assistant Professor, ACPM Medical College, Dhule, Maharashtra India.

ABSTRACT

Introduction- Gastrointestinal (GI) problems are common problems medical practitioners encounter in the emergency department and in the primary care setting. Understanding the characteristics of GI symptoms in older adults and their underlying pathophysiology is important in order to facilitate diagnosis and treatment.

Aims And Objectives-

- 1) To study the occurrence of Gastrointestinal (GIT) diseases in elderly patients.
- 2) To study the clinical presentation of GIT diseases in elderly patients.
- 3) To evaluate the GIT disorders in elderly patients by using laboratory investigations like blood counts, blood sugar, endoscopy, barium studies, CT abdomen and other investigations as needed.

Material And Methods- Prospective observational study was conducted on 100 patients. After taking informed consent, patients who presented with various symptoms like anorexia, nausea, vomiting, hematemesis, melena, hematochezia, recent change in bowel habits, recent loss of weight, anal problems were thoroughly evaluated clinically and with other investigations like endoscopy, barium studies and CT abdomen. **Results-** In present study, males in age group of 37.33% were most commonly affected and females in 60-64 years age group were most commonly affected. 75% males were affected and 25% females. Hypertension was most common co-morbid condition (24%). Pain in abdomen followed by anorexia were most common symptoms. On endoscopic finding, gastritis and growth in stomach was seen in 20 patients each. These endoscopic findings correlated with our final results. **Conclusion-** Gastrointestinal disorders are most common cause of mortality and morbidity in elderly patients. Endoscopic findings and histopathological findings are cornerstone for diagnosis. Early diagnosis and treatment will definitely help in reducing mortality and morbidity.

KEYWORDS

Elderly, Endoscopy, histopathological, pain in abdomen.

INTRODUCTION-

The elderly population is considered as people aged 65 years or above, but according to literature, increasing life expectancy may move upwards in years to come.¹ Aging affects all functions of the gastrointestinal system (GIS): motility, enzyme secretion, digestion, hormone secretion, and absorption. The most common gastrointestinal problem (motor) encountered by gastroenterologist in elderly patient include dysphagia, anorexia, dyspepsia, and disorders of colonic function.³ With the advance in age, there is disturbance in absorption of macronutrients and some micronutrients.⁴ One reason for this disruption is, mucosal weight and the content of epithelial cell transporters and some enzymes is higher per unit length of intestine in older rodents as compared to that in the young.⁴ Gastric ulcers and duodenal ulcers are more common. Intestinal inflammation could be due to, disruption of intestinal barrier which may lead to passage of microbial antigens and toxins, and is also associated with neurological diseases.^{5,6} Elevated levels of reactive oxygen species (ROS) which results in oxidative stress may lead to intestinal inflammation.^{7,8} An initial shock, persistence of bleeding and rebleeding carries a worse prognosis.⁹ Advances in diagnostic and therapeutic endoscopy, use of powerful acid-suppressive and vasoactive agents, and less invasive surgical approaches are needed for promising outcomes of acute UGIB in the elderly.¹⁰

Aims And Objectives-

- 1) To study the occurrence of Gastrointestinal (GIT) diseases in elderly patients.
- 2) To study the clinical presentation of GIT diseases in elderly patients.
- 3) To evaluate the GIT disorders in elderly patients by using laboratory investigations like blood counts, blood sugar, endoscopy, barium studies, CT abdomen and other investigations as needed.

MATERIAL AND METHODS-

Type of study: Prospective observational study.

Sample size- 100.

Inclusion Criteria-

- 1) Patients above 60 years.
- 2) Patients with GIT symptoms.

- 3) Patients who have been investigated with barium studies, routine blood tests, CT abdomen, endoscopy as needed.
- 4) Patients giving informed consent.

Exclusion Criteria-

- 1) Patients not giving informed consent.
- 2) Patients less than 60 years.
- 3) Patients with primary bile duct, pancreatic and hepatic diseases.
- 4) Patients with non luminal GIT diseases.
- 5) Patients with other systemic illness than GIT disorders.
- 5) Patients who have not been investigated with barium studies, routine blood tests, CT abdomen, endoscopy as needed.

Study Procedure-

After taking informed consent, patients who presented with various symptoms like anorexia, nausea, vomiting, hematemesis, melena, hematochezia, recent change in bowel habits, recent loss of weight, anal problems were thoroughly evaluated clinically and with other investigations like endoscopy, barium studies and CT abdomen.

RESULTS-

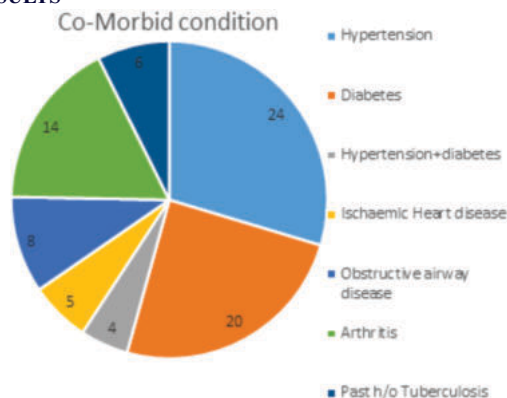


Chart 1: Co-morbid Conditions In Patients Presenting With GIT Disorders.

Table 1: Age And Gender Distribution In Patients Presenting With GIT Disorders.

Age(Years)	Males	Females	Total
60-64	19(25.33%)	11(44%)	30
65-69	21(28%)	6(24%)	27
70-74	28(37.33%)	6(24%)	34
75 and above	7(9.3%)	29(8%)	9
Total	75(75%)	25(25%)	100(100%)

Out of 100 patients, 75% were males and 25% were females. Male:Female ration was 3:1.

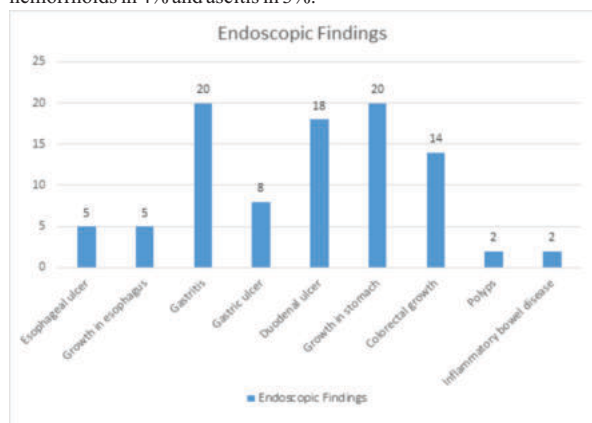
In our study, smoking and tobacco consumption was seen in 44% each. Alcohol consumption was seen in 25%, 8% were on analgesic medications.

Table 2: Various Complaints/Symptoms Present In Patients

Symptoms	Number
Pain in abdomen	51
Anorexia	48
Weight loss	43
Nausea/vomiting	36
Malena	34
Loose motions	33
Constipation	33
Dyspepsia	29
Abdominal distension	25
Dysphagia	16
Hematochezia	11
Anal problems	4

On general examination of these patients, pallor was seen in 63%, malnutrition in 36%, Lymph node enlargement in 19%, edema feet in 11%, clubbing in 2%.

On systemic examination, abdominal tenderness was seen in 51%, lump in 17%, hepatomegaly and splenomegaly in 5% each, hemorrhoids in 4% and ascitis in 3%.

**Chart 2: Endoscopic Findings In Our Study****Table 3: Findings Of Barium Study**

Barium findings	Number
Esophageal ulcer	5
Growth in esophagus	5
Gastric ulcer	7
Duodenal ulcer	16
Growth in stomach	8
Abdominal Koch	2
IBD	2
Polyp	2
Colorectal growth	12

On CT SCAN, 15% were detected to have, cancer stomach, 10% colorectal cancer, 3% Cancer of esophagus, 2% abdominal Koch, 10% lymphadenopathy and 1% with renal mass.

Table 4: Final Diagnosis Of Patients Taken For Study

Final diagnosis	No. of patients
Anaemia	63

Gastric ulcer	8
Duodenal ulcer	18
Gastritis	20
Esophagitis	5
Abdominal Koch	2
Polyp	2
Inflammatory bowel disease	2
Hemorrhoids	4
Ca stomach	20
Ca colorectal	14
Ca esophagus	5

DISCUSSION-

The present study offered a good opportunity to evaluate and analyze the GIT disorders in elderly at tertiary care hospital. An incidence rate of 25.7% of GIT disorders shows that these are the important causes of hospital admission in elderly and significantly cause mortality and morbidity. This is quiet high as compared to previous Indian study.¹¹ This may be attributed to food habits, addiction habits, environmental conditions, genetic predisposition of the population.

The present study detects the incidence of various common GI disorders in elderly population. It was helpful in identifying the present complaints of patients with GIT disorders like dyspepsia, pain in abdomen, anorexia, nausea, vomiting, hematemesis, malena, recent changes in bowel habits, hematochezia, or with history of significant weight loss and anal problems.

The gender ration was 3:1 (male:female). This could be due to the fact that, males are exposed to various risk factors and seek more medical attention as compared to females.^{12,13} A high number of patients in younger age group are on expected line as life expectancy is 64 years at birth in our country. These demographic features are consistent with previous studies.^{14,15}

Co-morbid condition was detected in 77% of patients notable amongst them was hypertension, diabetes, ischaemic heart disease etc. Previously these are found to be in the similar range approximately 79% in one of the study conducted in India. These co-morbid condition were found to be more prevalent in males as compared to females, may be because of genetic predisposition compared to females, lifestyle, exposure of various risk factors, addiction habits which are more prevalent in males. Treating of these co-morbid conditions also needs to be taken in consideration while treating the patients.

In addictions, history of smoking, tobacco chewing and alcoholism were detected in almost >70% patients, most of them were males. Notably tobacco chewing were encountered in 40% of patients and surprisingly it was equal in both genders. Our study showed higher incidence as compared to Tukaria et al in which incidence was seen only in 55%.¹¹

Strikingly in our study, we detected that NSAIDs were important cause of gastritis and peptic ulcer disease in 60% and 30% of all cases of gastritis and peptic ulcer disease respectively.¹⁶ This is quite high as compared to study of Samal et al¹⁵ but consistent to the study of Thukaria et al.¹¹ Taha et al found the incidence of 20-40%.¹⁷ High incidence of co-morbid conditions necessitating the use of offending agents like NSAIDs appears to be a cause of it.¹⁶

Out of 26 patients with peptic ulcer disease in total, 8(30.8%) patients were found to be medication related of them, 4 cases were duodenal ulcer and 4 were of gastric ulcer. There were no complications found during the study like perforation requiring urgent surgery like other study.¹¹

Fock et al noted that nearly half of all the patients of NSAIDs induced peptic ulcer disease presented with complication such as perforation, with 25% requiring emergency surgery which was not seen in our study.¹⁸

Clinical presentation of the gastrointestinal problems were consistant with studies done previously.^{11,15,16} Common symptoms encountered were dysphagia, pain in abdomen, anorexia, nausea, vomiting, hematemesis, malena, recent change in bowel habits, hematochezia or history of significant weight loss and anal problems.

On general examination, it was found that 63% of patients were pale

and out of that almost all patients were suffering from malignancy. 40% patients suffering from non malignant conditions were anaemic which was consistent with the study of Thukaria et al¹¹. Mizokami et al, found the incidence of anaemia in malignant and non malignant persons in 68% and 46% respectively.¹⁶

On systemic examination, abdominal tenderness were the most frequently encountered findings in 53% of patients which was quite high as compared to study of Mizokami et al.¹⁶ This is because of nutrition and environmental condition and lifestyle of population.

Endoscopic evaluation showed findings to be consistent with the studies of Thukaria and Mizokami et al.^{11,16} In present study, it is clear that upper GIT lesion (76%) were prominent as compared to lower GIT lesions (18%). This may be attributed to food habits, tobacco chewing, alcohol, drugs, environmental and genetic predisposition of population.

CT scans were done in 41% and barium study in 69% helped us in confirming clinical diagnosis. Barium studies helped in confirming endoscopic findings. CT scan was helpful in diagnosing malignancy and other associated lesions related with primary lesions.

Our study has found malignancy as final diagnosis in 39% which is consistent with study conducted by Samal et al.¹⁵ The highest incidence of carcinoma of stomach amongst various malignancies in our study is similar to study conducted by Thukaria and Mizokami et al.^{11,16}

On the other hand studies from western countries found high incidence of non malignant disorders and colorectal carcinoma.¹⁴ This could be due to different addictions and food habits in western countries.

CONCLUSION-

Gastrointestinal disorders are most common cause of mortality and morbidity in elderly patients. Endoscopic findings and histopathological findings are cornerstone for diagnosis. Early diagnosis and treatment will definitely help in reducing mortality and morbidity.

Acknowledgement-

We are thankful to our nurses, ward boys and juniors who has helped me in carrying out the study.

Conflict Of Interest- None

REFERENCES-

- 1) <https://data.oecd.org/pop/elderly-population.htm>.
- 2) Igor Dumic, Terri Nordin, Mladen Jecmenica, Milica Stojkovic Lalosevic, Tomica Milosavljevic, and Tamara Milovanovic. Gastrointestinal Tract Disorders in Older Age. Canadian Journal of Gastroenterology and Hepatology. 19;2019. <https://doi.org/10.1155/2019/6757524>
- 3) Michael firth and Charlene m. Prather. Gastrointestinal Motility Problems in the Elderly Patient. GASTROENTEROLOGY 2002;122:1688–1700.
- 4) Peter R. Holt. Intestinal Malabsorption in the Elderly. Dig Dis 2007;25:144–150.
- 5) Suzuki T. Regulation of intestinal epithelial permeability by tight junctions. Cell Mol Life Sci. 2013;70(4):631–59.
- 6) Forsyth CB, Shannon KM, Kordower JH, Voigt RM, Shaikh M, Jaglin JA, Estes JD, Dodiya HB, Keshavarzian A. Increased intestinal permeability correlates with sigmoid mucosa alpha-synuclein staining and endotoxin exposure markers in early Parkinson's disease. PLoS One. 2011;6(12):e28032.
- 7) Zhang R, Miller RG, Gascon R, Champion S, Katz J, Lancero M, Narvaez A, Honrada R, Ruvalcaba D, McGrath MS. Circulating endotoxin and systemic immune activation in sporadic amyotrophic lateral sclerosis (sALS). J Neuroimmunol. 2009;206(1-2):121–4.
- 8) Wang A, Keita AV, Phan V, McKay CM, Schoultz I, Lee J, Murphy MP, Fernando M, Ronaghan N, Balce D, et al. Targeting mitochondria-derived reactive oxygen species to reduce epithelial barrier dysfunction and colitis. Am J Pathol. 2014;184(9):2516–27.
- 9) Hochain P, Merle V, Capet C et al (1996) Hémorragies digestives hautes du sujet âgé de plus de 80 ans: fréquence et facteurs pronostiques [Upper digestive hemorrhage in patients over 80 years of age: incidence and prognostic factors]. Gastroenterol Clin Biol. 20(8-9):638–644.
- 10) Charatcharoenwithaya P, Pausawasdi N, Laosanguaneak N, Bubthamala J, Tanwandee T, Leelakusolvong S (2011) Characteristics and outcomes of acute upper gastrointestinal bleeding after therapeutic endoscopy in the elderly. World J Gastroenterol. 17(32):3724–3732. <https://doi.org/10.3748/wjg.v17.i32.3724>.
- 11) Thakuria B, Mahanta M. Clinical and laboratory evaluation of GIT disorders in elderly. Journal of Indian academy of geriatric. 2006;2:98–100.
- 12) Wilson J, Pryde A, Macintyre C, Heading R. Normal pharyngoesophageal motility. Digestive Diseases and Sciences. 1989;34(10):1590–1599.
- 13) Madsen JL. Effect of gender, age and body mass index on gastrointestinal transit time. Dig Dis Sci 1992;37: 1548–1553.
- 14) Balducci L, Extermann M. A practical approach to older patients with cancer. Curr Prob! Cancer 2001;25:6–76.
- 15) Samal SC, Ramkrishna BS. Gastrointestinal problems in elderly. Indian J Med Res 1997;16:295–311.
- 16) Mizokami Y, Narusimha K, Shiraishi T et al. Non helicobacter pylori ulcer disease in rheumatoid arthritis patients receiving long term NSAIDs therapy. J Gastroentero. 2000; 35 Suppl 12:23–38.
- 17) Taha AS. Non-steroidal anti-inflammatory drug gastropathy and helicobacter pylori infection. Ital J Gastroentero Hepatol 1999;31 Suppl 1:S23–26.

- 18) Folk KMJ. Peptic ulcer disease in the 1990's: an Asian perspective. L Gastroenterol Hepatol. 1997;12:23–28.