

# Assessment of Abnormal Endoscopic Findings in Iron Deficiency Anemia Patients: An Observational Study

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## ABSTRACT

**Background:** In patients without an obvious source of blood loss, occult bleeding from the gastrointestinal tract is widely believed to be the most common cause of iron-deficiency anemia. Many studies have concluded that on evaluation of Gastrointestinal Tract for IDA; most of the lesions were in lower GI Tract and have recommended that evaluation for IDA should be started with lower GI examination. The present study was planned to evaluate abnormal endoscopic findings in patients with severe iron deficiency anemia.

**Materials and Methods:** The present study to assess endoscopic findings in patients iron deficiency anemia. 150 subjects with confirmed diagnosis of iron deficiency anemia were included in the present study. Complete demographic, clinical and hematological details of all the subjects were obtained. In all the subjects, Upper gastrointestinal endoscopy was performed and findings obtained were correlated with severe iron deficiency anemia. Analysis of all the results was done by SPSS software.

**Results:** In the present study, it was observed that erosive gastritis was the most common abnormal endoscopy finding in

subjects with iron deficiency anemia. Other commonly seen abnormal endoscopic findings were fundal varix, fundal varicies, peptic ulceration etc.

**Conclusion:** GI endoscopy should be used routinely in Iron deficiency anemia patients.

**Keywords:** Colonoscopy, Endoscopy, Iron Deficiency Anemia.

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## Article History:

Received: 11-02-2017, Revised: 07-03-2017, Accepted: 28-03-2017

### Access this article online

Website: <a href="http://www.ijmrp.com">www.ijmrp.com</a>	Quick Response code 
DOI: 10.21276/ijmrp.2017.3.2.089	

## INTRODUCTION

In patients without an obvious source of blood loss, occult bleeding from the gastrointestinal tract is widely believed to be the most common cause of iron-deficiency anemia. A thorough examination of the gastrointestinal tract, particularly the colon, has therefore become standard practice.<sup>1,2</sup>

Indeed, many clinicians advocate colonoscopy or barium-enema radiography regardless of signs or symptoms of disease in the upper gastrointestinal tract.<sup>3</sup> Previous studies of patients with iron-deficiency anemia were performed in nonhomogeneous populations with an assortment of radiographic and endoscopic techniques, resulting in a variety of recommendations for evaluating such patients.<sup>4-7</sup>

The diagnosis of iron deficiency, however, is not always straightforward, as elevation of serum ferritin and a decrease in serum iron occur in chronic disease.<sup>7</sup> Important implications for the recognition of iron deficiency anaemia include diagnosis and correction of underlying causes, most of which are identifiable, by means of conventional upper gastrointestinal endoscopy and colonoscopy however it remains unresolved which procedure should be done first. Many studies have concluded that on evaluation of Gastrointestinal Tract for IDA; most of the lesions

were in lower GI Tract and have recommended that evaluation for IDA should be started with lower GI examination.<sup>8-10</sup> The present study was planned to evaluate abnormal endoscopic findings in patients with severe iron deficiency anemia.

## MATERIALS AND METHODS

The present study planned in Department of Medicine, SMS Medical College, Jaipur, Rajasthan (India) and it included evaluation of endoscopic findings in patients iron deficiency anemia.

150 subjects with confirmed diagnosis of iron deficiency anemia. Only those patients were included in the present study which reported to the medicine OPD of the institution with chief diagnosis of Iron deficiency anemia. Patients with history of any other systemic illness or any known drug allergy were excluded from the present study. Pregnant subjects and subjects with positive history of asthma were also excluded from the present study. Complete demographic, clinical and hematological details of all the subjects were obtained. In all the subjects, Upper gastrointestinal endoscopy was performed and findings obtained were correlated with severe iron deficiency anemia.

**Statistical Analysis**

Analysis of all the results was done by SPSS software. Univariate regression curve was used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

**RESULTS**

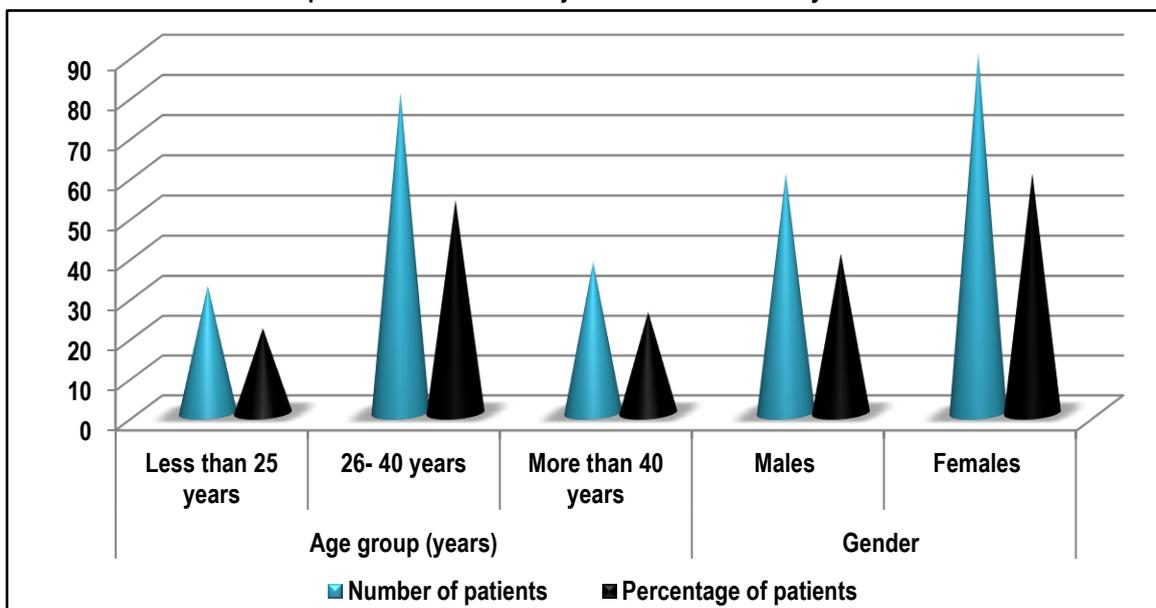
A total of 150 subjects with Iron deficiency anemia were included in the present study. Among these 150 subjects, 60 were males while the remaining 90 were females. Majority of the subjects (53.3 percent) belonged to the age group of 26 years to 40 years,

while only 21.3 percent of the subjects were less than 25 years of age. Table 1 and Graph 1 shows the age wise and gender wise distribution of subjects with Iron deficiency anemia. In the present study, we observed that erosive gastritis was the most common abnormal endoscopy finding in subjects with iron deficiency anemia. Table 2 and Graph 2 show the distribution of the subjects with various endoscopic findings. Other commonly seen abnormal endoscopic findings were fundal varix, fundal varicies, peptic ulceration etc.

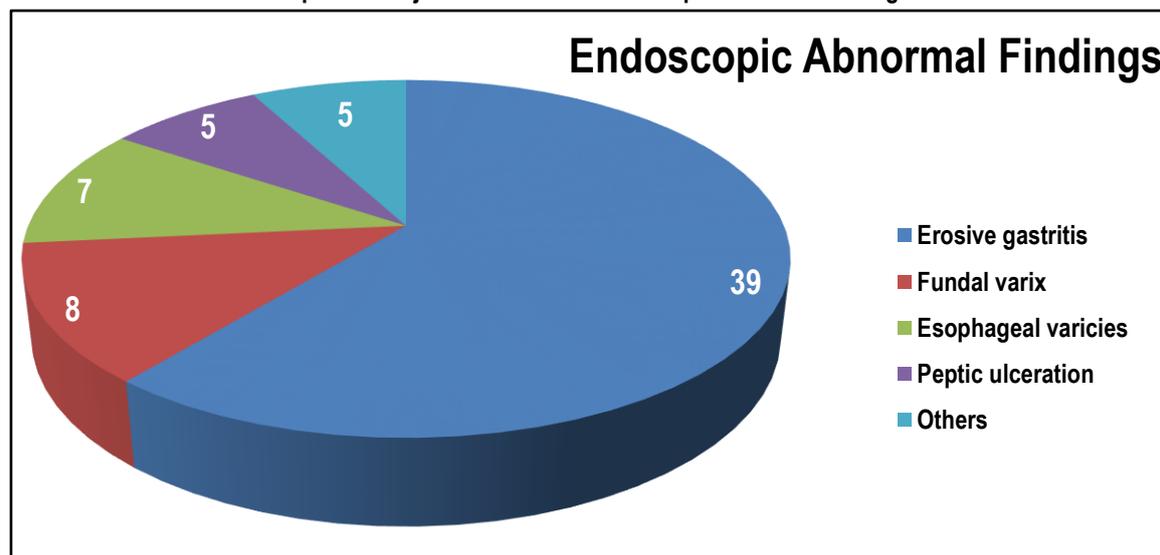
**Table 1: Age wise and gender wise distribution of subjects with Iron deficiency anemia**

Parameter		Number of patients	Percentage of patients
Age group (years)	Less than 25 years	32	21.3
	26- 40 years	80	53.3
	More than 40 years	38	25.4
Gender	Males	60	40
	Females	90	60

**Graph 1: Distribution of subjects with Iron deficiency anemia**



**Graph 2: Subjects with various endoscopic abnormal findings**



**Table 2: Distribtuion of subejects with various endoscopic abnormal findings**

S No.	Endoscopic abnormal findings	No. of patients
1.	Erosive gastritis	39
2.	Fundal varix	8
3.	Esophageal varicies	7
4.	Peptic ulceration	5
5.	Others	5
<b>Total</b>		<b>64</b>

## DISCUSSION

In the present study, it was observed that erosive gastritis was the most common abnormal endoscopy finding in subjects with iron deficiency anemia. Other commonly seen abnormal endoscopic findings were fundal varix, fundal varicies, peptic ulceration etc. Fireman Z et al determined the yield of endoscopy evaluations in premenopausal women with iron deficiency anemia. Upper and lower gastrointestinal endoscopic examinations were conducted in 45 premenopausal women with iron deficiency anemia not related to gynecologic or nutritional causes. Forty-three of the 45 women fulfilled the entry criteria and were enrolled. Their mean age was 35 +/- 15 years and their mean hemoglobin level 9.3 +/- 2.3 g/dl. Twenty-eight upper gastrointestinal lesions were demonstrated in 24 of the 43 patients (55.8%): erosive gastritis in 12 (27.9%), erosive duodenitis in 4 (9.3%), erosive esophagitis in 3 (7.0%), hiatus hernia (with Cameron lesions) in 3 (7.0%), active duodenal ulcer in 1 (2.3%) and hyperplastic polyp (10 mm) in 1 (2.3%). Five lower gastrointestinal lesions were detected in 5 patients (16.3%): 2 (4.6%) had adenocarcinoma of the right colon, 2 (4.6%) had pedunculate adenomatous polyp > 10 mm, and 1 (2.3%) had segmental colitis (Crohn's disease). One patient (2.3%) had pathologic findings in both the upper and lower gastrointestinal tracts. Their findings of a gastrointestinal source of chronic blood loss in 28 of 43 premenopausal women with iron deficiency anemia (65.1%) suggested that this population will benefit from bi-directional endoscopic evaluation of the gastrointestinal tract.<sup>8</sup> Sereffhanoglu S et al evaluated the diagnostic yield of endoscopy in patients with iron deficiency anemia (IDA) and to define predictive factors of gastrointestinal (GI) lesions causing IDA. Ninety-one patients (77 women, 14 men; mean age: 43 years) who were decided to have esophago-duodenoscopy and/or colonoscopy for iron deficiency anemia were interviewed and responded to a questionnaire that included clinical and biochemical variables. The endoscopic findings were recorded as GI lesions causing IDA or not causing IDA. Endoscopy revealed a source of IDA in 18.6 % of cases. The risk factors for finding GI lesions causing IDA were as follows: male gender (p= 0.004), advanced age (> 50 years) (p= 0.010), weight loss (over 20% of total body weight lost in last 6 month) (p= 0.020), chronic diarrhea (p= 0.006), change of bowel habits (p= 0.043), epigastric tenderness (p= 0.037), raised carcinoembryonic antigen (CEA) level (normal range: 0-7 ng/mL) (p= 0.039), < 10 gr/dl hemoglobin (Hb) level (p=0.054). None of these risk factors had been present in 21 (23%) women younger than 51 years. In this group, no patient had any GI lesion likely to cause IDA (negative predictive value= 100%). In multivariate analysis, advanced age (p=0.017), male gender (p< 0.01) and weight lost (p=0.012) found that associated with GI lesions in all patients. It may be an appropriate

clinical approach to consider these risk factors when deciding for gastrointestinal endoscopic evaluation in iron deficiency anemia.<sup>11</sup> Capurso G et al identified clinical and biochemical variables that predict the outcome of upper/lower endoscopy in outpatients with iron deficiency anemia and to determine which endoscopic procedure should be performed first. Ninety-eight patients (74 women, 24 men; mean age 55 years) with iron deficiency anemia referred from the hematology department were interviewed and responded to a questionnaire that included clinical and biochemical variables, and underwent EGD (with biopsies) and colonoscopy. The endoscopic findings were recorded as presence/absence of GI cancer, upper/lower GI tract lesions and bleeding/non-bleeding-associated GI lesions. A multiple logistic regression analysis was applied to identify variables significantly related with the outcome of the investigations. A likely cause of iron deficiency anemia was found in 86.7% of patients. The risk factors for GI malignancies were: male gender, advanced age, and lower mean corpuscular volume. The risk factors for bleeding-related diseases were the following: greater age, absence of lower-GI tract symptoms, and a positive fecal occult blood test. The risk factors for non-bleeding-related GI tract diseases were the following: negative fecal occult blood test and higher Hb level. For non-hospitalized patients with iron deficiency anemia, colonoscopy should be the initial investigation in those greater than 50 years of age, particularly men, and those without upper-GI tract symptoms and with lower values for mean corpuscular volume and Hb.<sup>12</sup>

## CONCLUSION

Under the light of above mentioned results, it can be concluded that GI endoscopy should be used routinely in Iron deficiency anemia patients. However; further studies in this field of medicine is recommended for better exploration of the results.

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**Source of Support:** Nil.

**Conflict of Interest:** None Declared.

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**Cite this article as:** Sandeep Jain. Assessment of Abnormal Endoscopic Findings in Iron Deficiency Anemia Patients: An Observational Study. *Int J Med Res Prof*. 2017; 3(2):426-29. DOI: 10.21276/ijmrp.2017.3.2.089