**Journal of Advanced Medical and Dental Sciences Research**

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr ICV 2018= 82.06

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

# Original Research

## Assessment of seasonal variation in peptic ulcer related upper gastrointestinal bleed

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***ABSTRACT:***
**Background:** Most of the literature has found higher frequency of peptic ulcer disease and its complications like GI bleed occurring during winter months. The present study was conducted to assess seasonal variation in peptic ulcer related upper gastrointestinal bleed. **Materials & Methods:** 65 patients above 18 years with diagnosis of peptic ulcer bleed after UGI endoscopy of both genders were enrolled. Majority of the procedures were done using intravenous midazolam. Intravenous propofol was used in few cases. Endoscopic findings were recorded. **Results:** Out of 65 patients, males were 35 and females were 30. Clinical features were Malena in 5, Hematemesis in 20, Melena + Hematemesis in 40. Endoscopy findings were gastric ulcer in 32, duodenal ulcer in 18, gastroduodenal ulcers in 10 and erosions in 5 cases. Month of occurrence was winter in 15, spring in 25, summer in 20 and autumn in 5 cases. The difference was significant (P< 0.05). **Conclusion:** Maximum cases were observed in spring and summer.
**Key words:** Peptic ulcer disease, spring, summer

Received: 22-07- 2019 Accepted: 25-08-2019

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**This article may be cited as:** Srivastava A, Gupta S. Assessment of seasonal variation in peptic ulcer related upper gastrointestinal bleed. J Adv Med Dent Scie Res 2019;7(9):270-272.

## INTRODUCTION

Peptic ulcer disease (PUD) is a major global public health problem with significant impact on the cost of hospitalization, morbidity and mortality. PUD is estimated to affect about six million individuals per year in the US, contributing fairly to increased healthcare costs. The overall mortality of upper GI bleeding has remained relatively constant at about 10% during the past few decades as improvements in management of UGI bleed almost been balanced by a population with an increasing life expectancy and associated comorbidities. Although seasonality is a well-known phenomenon in the epidemiology of many diseases including gastrointestinal diseases where some particular months are associated with higher incidences. Various mechanism implicated are gastrointestinal infection, air pollution, dietary habits, genetic pre-disposition, parallel changes in humidity, vascular disorders, stressful life.

Gastrointestinal (GI) diseases have been reported to occur throughout the year, but show some seasonal variation. Analyses for seasonality of GI diseases have been dedicated to diseases that acute or intensive care is pivotal treatment such as peptic ulcer bleeding (PUB), peptic ulcer (PU), and acute pancreatitis (AP). Since PUB typically requires an emergent endoscopic procedure for bleeding control, prediction of its incidence is important to prepare the presence of backup personnel with sufficient capacity during the peak season in order to provide the best treatment. As most patients with AP are hospitalized for intensive care with aggressive hydration and nutritional support, predicting the demand for hospital resource is crucial for optimizing patient care. The present study was conducted to assess seasonal variation in peptic ulcer related upper gastrointestinal bleed.

## MATERIALS & METHODS

The present consisted of 65 patients above 18 years with diagnosis of peptic ulcer bleed after UGI endoscopy of both genders. All gave their written consent to participate in the study.

Data such as name, age, gender etc. was recorded. Clinical characteristic, the date of admission etc. was recorded. UGI endoscopy was performed within 24 hours of admission. EGD was performed perorally in a standard manner with the patient in the left lateral position after topical xylocaine spray/jelly. Majority of the procedures were done using intravenous midazolam. Intravenous propofol was used in few cases. Endoscopic findings were recorded. Patients were categorized into twelve 1-month intervals and into four 3- month intervals (seasons): Winter was defined as January-March, Spring as April-June, Summer as July-September, and Autumn as October-December. Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

## RESULTS

**Table I Distribution of patients**

| Total- 65 | | |
|---|---|---|
| **Gender** | **Male** | **Female** |
| Number | 35 | 30 |

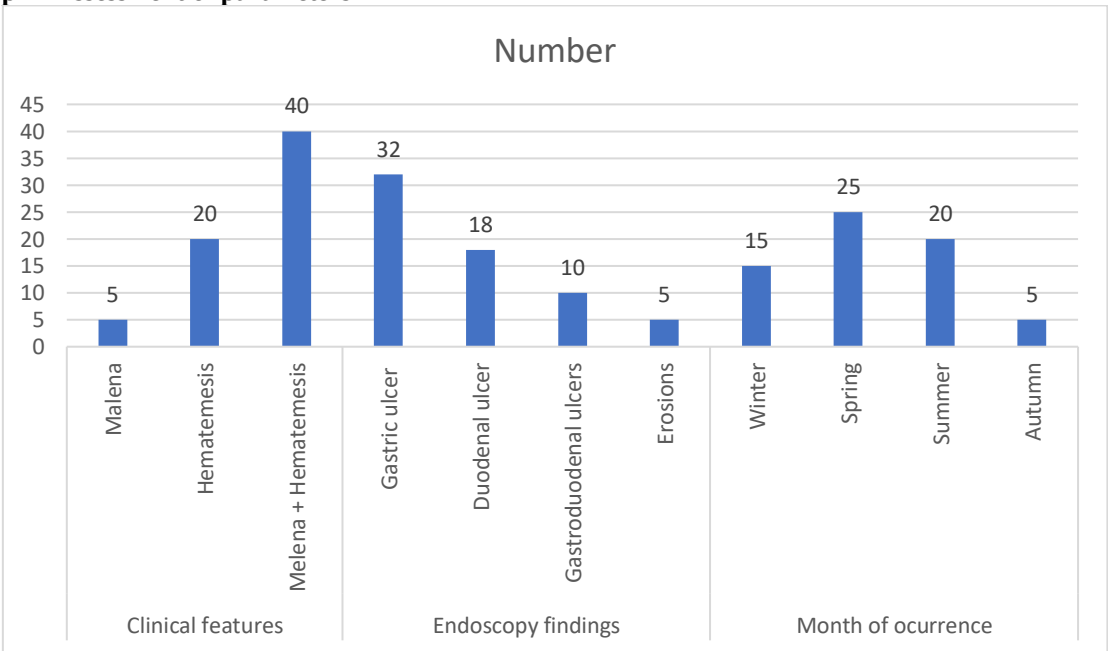
Table I shows that out of 65 patients, males were 35 and females were 30.

**Table II Assessment of parameters**

| Parameters | Variables | Number | P value |
|---|---|---|---|
| Clinical features | Malena | 5 | 0.01 |
| | Hematemesis | 20 | |
| | Melena + Hematemesis | 40 | |
| Endoscopy findings | Gastric ulcer | 32 | 0.01 |
| | Duodenal ulcer | 18 | |
| | Gastroduodenal ulcers | 10 | |
| | Erosions | 5 | |
| Month of ocurrence | Winter | 15 | 0.05 |
| | Spring | 25 | |
| | Summer | 20 | |
| | Autumn | 5 | |

Table II, graph I shows that clinical features were Malena in 5, Hematemesis in 20, Melena + Hematemesis in 40. Endoscopy findings were gastric ulcer in 32, duodenal ulcer in 18, gastroduodenal ulcers in 10 and erosions in 5 cases. Month of occurrence was winter in 15, spring in 25, summer in 20 and autumn in 5 cases. The difference was significant (P< 0.05).

**Graph I Assessment of parameters**



## DISCUSSION

Most of the literature has found higher frequency of peptic ulcer disease and its complications like GI bleed occurring during winter months, late autumn and early spring season.[13,14,15] The present study was conducted to assess seasonal variation in peptic ulcer related upper gastrointestinal bleed.

We found that out of 65 patients, males were 35 and females were 30. Kadla et al[16] assessed whether frequency of the peptic ulcer bleed varies with the monthly and seasonal climatic changes during the year in our setting. Additionally, whether can we define a particular time of the year as high risk for peptic ulcer bleed. A total of 4811 patients were diagnosed as peptic ulcer bleed out of a total of 10800 patients presenting with upper gastrointestinal bleed. Mean age of the patients was 44.5 ± 17.2 years with more males (58 %) than females (42 %). The majority of peptic ulcer bleed patients (48 5%) were seen between April to June months of the year. Spring season had the maximum number of peptic ulcer bleed patients.

We observed that clinical features were Malena in 5, Hematemesis in 20, Melena + Hematemesis in 40. Endoscopy findings were gastric ulcer in 32, duodenal ulcer in 18, gastroduodenal ulcers in 10 and erosions in 5 cases. Month of occurrence was winter in 15, spring in 25, summer in 20 and autumn in 5 cases. Yoon et al[17] found that in total, 14,626 patients with PU, 3575 with PUB, and 9023 with AP were analyzed for 5 years. A clear seasonal variation was noted in PU, with the highest incidence rate during winter, the second highest during spring, the third highest during summer, and the lowest incidence during autumn for 5 years (P<.001). PUB also showed significant seasonal fluctuations, with winter peak for 4 years, except 1 year, which had a spring peak (P<.001). However, AP showed no clear seasonal variations (P=.090). No significant differences in the seasonal variation of PU, PUB, and AP were observed according to sex and age subgroups (<60 years vs ≥60 years).

The limitation the study is small sample size.

## CONCLUSION

Authors found that maximum cases were observed in spring and summer.

## REFERENCES


1. Cherian JV, Somasundaram A, Ramalingam S, Jayanthi V. Peptic ulcer disease in India - A 16 years trend analysis. Trop Gastroenterol 2010; 31:260-5.
2. Sonnenberg A, Wasserman IH, Jacobsen SJ. Monthly variation of hospital admission and mortality of peptic ulcer disease: a reappraisal of ulcer periodicity. Gastroenterology. 1992 Oct 1;103(4):1192-8.
3. Fich A, Goldin E, Zimmerman J, Rachmilewitz D. Seasonal variations in the frequency of endoscopically diagnosed duodenal ulcer in Israel. J Clin Gastroenterol.1988;10:380– 382.
4. Linn HW. An analysis of peptic ulcer in South Australia, based on a study of 1,027 case reports. Med J Aust. 1946, 2:649– 658.
5. Breen FJ, Grace WJ. Bleeding peptic ulcer: seasonal variation. Am J Dig Dis. 1962, 7:727–732.
6. Christensen A, Hansen CP, Thagaard C, Lanng C: Seasonal periodicity of perforated gastric ulcer . Dan Med Bull. 1988, 35:281–282.
7. Patel NJ, Nalluri N, Deshmukh A, Pant S, Shah N, Badheka AO, Asti D, Lafferty JC, Schwartz C. Seasonal trends of heart failure hospitalizations in the United States: a national perspective from 2000 to 2011. Int J Cardiol.2014; 173:562– 563.
8. Sonnenberg A, Wasserman IH, Jacobsen SJ.Monthly variation of hospital admission and mortality of peptic ulcer disease: A reappraisal of ulcer periodicity. Gastroenterology.1992, 103: 1192–1198.
9. Fares A. Global patterns of seasonal variation in gastrointestinal diseases. J Postgrad Med. 2013, 59:203– 207.
10. Yen FS, Wu JC, Wang LM, Kuo BI, Hu SC, Lee SD: Seasonal variation in the incidence of peptic ulcer and esophageal variceal bleeding in Taiwan. Zhonghua Yi Xue ZaZhi (Taipei). 1996, 57:22–27.
11. Mizell S. Seasonal variation in gastric hydrochloric acid production in Ranapipiens. Am J Physiol. 1955; 180:650.
12. Markoc I. Seasonal variations of secretions and acidity of gastric juice in healthy subjects and in dogs. Byull Eksp Biol Med 1959; 47: 33.
13. Hui WM, Lam SK. Monthly variation in frequency of active duodenal ulcer and maximal acid output. J Gastroenterol Hepatol. 1988; 3:457–63.
14. Xirasagar S, Lin HC, Chen CS: Role of meteorological factors in duodenal ulcer seasonality: a nation-wide, population-based study. J Gen Intern Med. 2007; 22:1439–46.
15. Liu D, Gao A, Tang G, Yang W: Study of the relationship between the onset of peptic ulcers and meteorological factors. Chin Med J (Engl). 2003; 116:1940-42.
16. Kadla et al. Seasonal Variation in Peptic Ulcer related Upper Gastrointestinal Bleed: Ten Years Experience from Northern India. International Journal of Health and Clinical Research, 2021;4(8):146-149.
17. Yoon JY, Cha JM, Kim HI, Kwak MS. Seasonal variation of peptic ulcer disease, peptic ulcer bleeding, and acute pancreatitis: A nationwide population-based study using a common data model. Medicine. 2021 May 28;100(21):e25820-8.