

# Upper and lower gastrointestinal endoscopic findings among patients visiting BRSUD Tabanan with various gastrointestinal symptoms: a three year retrospective study

D P Surawan<sup>1</sup>, N W Widhidewi<sup>2</sup>, P A Suryanditha<sup>2</sup> and S Masyeni<sup>2\*</sup>

<sup>1</sup>BRSUD Tabanan, Jalan Pahlawan 14 Tabanan 82121, Indonesia

<sup>2</sup>Faculty of Medicine and Health Sciences, Universitas Warmadewa, Denpasar-Bali, Indonesia

\*masyeniputu@yahoo.com

**Abstract.** Upper or lower gastrointestinal endoscopy is used for both diagnostic and therapeutic procedures in the patients with gastrointestinal disorder. The indications of this procedure are dyspepsia syndrome with alarm sign, gastrointestinal bleeding, dysphagia, inflammatory bowel syndrome, any sign of gastrointestinal malignancy, and radio-graphic abnormalities as well as removing gastrointestinal corpus aliens or foreign bodies, collecting biopsy specimens or other clinical conditions. A retrospective study was conducted based on the medical record of endoscopic ward at BRSUD Tabanan during March 2015 through March 2018. The demography data, clinical diagnosis, the upper and lower gastrointestinal endoscopic result and any of pathological anatomic finding were reviewed. The most presenting symptoms as the reason to performed endoscopy are dyspepsia and hematemesis melena, as high as 15% for each reason. Majority endoscopic finding are stomach erythema, followed with peptic ulcer disease (comprises of stomach and duodenal ulcers), and erosive of the stomach, counting for 79 (16.2%), 67 (13.73%), 66 (13.5%), respectively. Normal endoscopy result was found in 91 (18.65%). Histological finding reveals 11 of 11 specimens were malignancies specimens. In conclusion, upper and lower endoscopy was the tool of choice in diagnoses patient with GI symptoms.

## 1. Introduction

Upper endoscopy (esophagogastroduodenoscopy/EGD) and lower endoscopy (colonoscopy) are the procedure of choice in diagnose or therapeutic approach in the treatment of patients with gastrointestinal disorders in adult or even in children [1–3]. In detection of peptic ulcers, polyps or other mucosal abnormalities, the diagnostic accuracy of EGD is superior than radio-graphic tools as reported in numerous studies [4,5]. Several reasons to perform the endoscopy are isolated dysphagia and or odynophagia, persistent isolated nausea or vomiting, dyspepsia syndrome with alarm sign, chronic anemia and/or iron deficiency, acute GI bleeding whether originating in the upper or lower GI, gastro-esophageal reflux, Barrett's esophagus, peptic or duodenal ulcer, portal hypertension, GI biopsies, chronic diarrheal, any symptoms of GI malignancies, persistent abdominal pain and abnormal radiographs [6,7].

Therapeutic use of EGD is removal of selected polypoid lesions, foreign bodies subtraction, banding or sclerotherapy of esophageal varicose, placement of feeding tube or stent, Sengstaken-



Blakemore tube (SB tube) placement or treatment of persistent bleeding insensitive to medical treatment or dilatation of the esophagus [3,8–10]. Dramatic improvement in performing endoscopy related with advance fiber optic and video technology make this procedure become the first option in diagnosing GI disorder in the last 20 year [11].

The aim of this study to review the profile of the patients and endoscopies finding among patients underwent to endoscopy of various clinical reason in BRSUD Tabanan by certified internist.

## 2. Material and methods

A retrospective study has been conducted based on the medical record in the endoscopy ward of BRSUD Tabanan from March 2015 through March 2018. Demographic data such as gender, age, diagnosis prior to EGD, endoscopic finding and result of pathology anatomy were retrieved from the medical record. The diagnoses of the samples were divided into upper (EGD) and lower colonoscopy group. The results of the EGD and colonoscopy were grouping based on the location of the abnormality found. The upper endoscopy /EGD and colonoscopy group were further divided into several categories such as esophageal, stomach, duodenal abnormality groups. Samples without any complete data such as incomplete date of birth, gender, clinical diagnosis or incomplete EGD finding were excluded from the study. Data were analyzed and presented as descriptive data.

## 3. Results

A total of 488 of the data met the inclusion criteria; there was 61.6% of male patient (Table 1). The data consist of upper endoscopy and colonoscopy, account for 364 and 124 (25.4%) respectively.

The top 5 of the clinical diagnoses as the indication of the investigations are listed in table 1, in which the lowest frequency of clinical diagnoses was an anal fistula, duodenal tumor, achalasia, and irritable bowel disease. Gastro esophageal reflux disease diagnoses were found in 23 (4.7%) of the patients.

**Table 1.** Characteristic of the patient.

	N (%)
Mean age (SD)	57.67±14.43
Gender	
Female	184(38.4)
Clinical Diagnoses	
Dyspepsia	73(15)
Hematemesis melena	73(15)
Melena	49(10)
Gastritis	45(9.2)
Peptic ulcer	33(6.8)
Type of investigation	
Upper endoscopy	364(74.6%)

Among dyspepsia patient, 32 (43.8%) was found erythema on the stomach (mostly at antrum site) followed with normal finding, erosion and esophagitis reflux. There was peptic ulcer and duodenal ulcer found in dyspepsia patient, accounting for 4 (5.48%) and 2 (2.74%) respectively.

Based on table 2, the most abnormal finding of esophagoduodenoscopies was gastric abnormality. Esophageal varices with gastropathy hypertensive portal was found as high as 15 (41.67%) of total patients with liver cirrhosis. It reveals that almost fifty percent of the liver cirrhosis patients are at risk to get upper GI bleeding. Another finding also reported such as tumor of stomach, duodenal tumor and esophageal tumor, as much as 4 (0.8%), 4 (0.8%) and 5 (1%), respectively. Unfortunately, there was no histological finding of those tumors.

The study also found multiple abnormalities finding on the esophageal, stomach and duodenum. The most multi-abnormality found was GERD with gastritis at the antrum, gastritis with bulbitis, peptic ulcer with duodenal ulcer or erosive mucosa. The most peptic ulcer was found in antrum area of the stomach, which was concordance with the finding of erythema and erosion.

**Table 2.** Profile of EGD gross findings.

	N (%)
Esophagus	
Esophagitis reflux	16(3.3)
Stenosis	5(1)
Tumor	5(1)
Varices	36(7.4)
Gaster	
Erythema	112(23)
Erosions	66(13.5)
Ulcer	51(10.5)
Gastropathy hypertensive portal	15(3.1)
Duodenum	
Ulcer	16(3.3)
Erythema	7(1.4)
Erosions	6(1.2)

**Table 3.** Gross and Histological Colonoscopies Findings.

	N (%)
Gross finding	
Rectal tumor	41(8.4)
Internal Hemorrhoid	23(4.7)
Colon Cancer	9(1.8)
Histological findings	
Adeno Ca Recti gr-1	13(2.9)
Adeno Ca Recti gr-2	3(0.6)
Adeno Ca Colon gr-1	2(0.4)

Another gross finding of colonoscopies was colitis non-specific, colitis ulcerative, proctitis, rectal polyp, hemorrhoid externals and rectal stenosis. Histological finding that is not presented in the table 3 were rectal adenoma, dysplasia and signet ring cell rectal carcinoma.

Miscellaneous findings of the EGD were worm infestations and fungal infections. Normal finding also found in 91 (18.65%) of the total patients who underwent EGD and colonoscopy. Among normal finding, 16 (17.58%) was found in dyspepsia patients.

#### 4. Discussion

Endoscopy and colonoscopy play an essential role in diagnosis or management of particular diseases. In general, endoscopy and colonoscopy are safe and effective tool with many advantages such as minimal morbidity and mortality, high sensitivity in diagnosing of GI mucosal disorders and very limited disadvantages such as inability to detect functional disorder of GI [12]. This procedure is visual examination of the mucosal of the various parts of gastro-intestinal tract from esophagus, stomach, duodenum and colon. In addition, the procedure allows collecting the specimen for further investigations such as histological examination [13]. In the case of unidentified bleeding site by EGD or colonoscopy in the case of overt anemia with GI symptom, the more superior EGD named small bowel endoscopy may another way to final diagnosis of the patient [14].

The indications of this procedure are varied, not only related with GI illnesses but also sign of GI disease that cannot be attributed to disease in other body systems. The current study found the main

clinical diagnoses is dyspepsia with gastritis superficialis antrum as the most finding followed by normal endoscopic finding. Identification of alarm features ( age > 50 y o, family history of GI malignancy, unintended weight loss, GI bleeding/iron deficiency anemia, dysphagia, odynophagia, persistent vomiting, abnormal imaging suggesting organic disease) in dyspepsia is a strong indication to perform endoscopy or colonoscopy [15]. It is worth noting that one-fourth of the malignancy case in dyspepsia do not report the alarm symptom [16]. Based on this finding, endoscopy is suitable to do in dyspepsia patient without any alarm symptom. In addition we also found esophageal and stomach tumor in the patient with dyspepsia.

The role of endoscopy in the patient with hematemesis and melena in this study is strongly recommended in order to find out the varices of esophagus (VE) or sign of portal hypertension. The study also found relative high finding of variceal esophagus as the complication of liver cirrhosis. Endoscopy is not only for diagnosis or screening of VE but also used as the treatment of the VE through SB-tube application, VE ligation or by injecting sclerotherapy in order to reduce the red-sign of VE or management of variceal hemorrhage [17]. The American Association for the study in liver disease (AASLD) has recommended to the cirrhosis patient undergo endoscopy to screen the VE and gastric varices [18].

The finding of duodenal disorders are ulcer, erythema and erosive. In United States, the main causes of peptic ulcer are *Helicobacter pylori* (Hp) infection [19] or NSAID related [20]. Unfortunately, although the prevalence of gastropathy NSAID elsewhere is relatively high [21], this study did not evaluate the patient history of NSAID using or the symptoms of Hp infection.

It has been reported elsewhere that upper and lower endoscopy able to collect the specimens for further diagnostic tool such as histological test [22,23]. This study also support the diagnosis of malignancies of rectum and colon in the patients presenting with constipation or anemia.

## 5. Conclusion

Dyspepsia was the main clinical diagnosis's finding and the reason of EGD with the majority finding was erythema of the antrum of the stomach. Minority of the patients with dyspepsia was found with tumor esophagus or gastric tumor. Due to endoscopy cost only those with dyspepsia and alarm sign is referred to the endoscopy procedure. When all the indications and disadvantages of this procedure are considered, this tool will be used in a fashion that is best for patients and assists ideal allocation of medical resources.

The study limitations are the study design, incomplete of the patient's data and the relatively low number of histological data reporting.

We thank all the nurse and BRSUD Tabanan involved in this study. We have special thanks to the University of Warmadewa for financials support.

## References

- [1] D Belsha, R Bremner, and M Thomson 2016 *Arch. Dis. Child* **101**, p1153
- [2] M A Sheiko, J A Feinstein, K E Capocelli and R E Kramer 2013 *Gastrointest. Endosc* **78**, p47
- [3] M Birk, P Bauerfeind, P Deprez, M Häfner, D Hartmann, C Hassan, T Hucl, G Lesur, L Aabakken, and A Meining 2016 *Endoscopy* **48**, p489
- [4] M Kaise, Y Ohkura, T Iizuka, R Kimura, K Nomura, Y Kuribayashi, A Yamada, Yamashita, T. Furuhashi, D Kikuchi, O Ogawa, A Matsui, T Mitani, and S Hoteiya 2014 *Endoscopy* **47**, p19
- [5] R Sato, M Fujiya, J Watari, N Ueno, K Moriichi, S Kashima, S Maeda, K Ando, H Kawabata, R Sugiyama, Y Nomura, T Nata, K Itabashi, Y Inaba, K Okamoto, Y Mizukami, Y Saitoh, and Y Kohgo 2011 *Endoscopy* **43**, p862
- [6] A Habr-Gama, P R A Alves, and D K Rex 2007 *Colonoscopy* (Blackwell Publishing Ltd, Oxford, UK, 2007), pp102–110

- [7] J -L Dupas, P -L Fagniez, L Palazzo, L Teillet, J Boyer, F Prat, and E Al 2001 *J. Chir. (Paris)* **138** p347
- [8] J P Cordon 2012 *World J Gastrointest Endosc* **4** p312
- [9] J Baillie and P Yudelman 1992 *Endoscopy* **24** p284
- [10] A M Kassem 2002 *Endoscopy* **34** p871
- [11] J P Franciosi, K Fiorino, E Ruchelli, J Shults, J Spergel, C A Liacouras, and M Leonard 2010 *J Pediatr. Gastroenterol Nutr* **51**, p443
- [12] L E Moore, 2003 *Clin Tech Small Anim. Pract* **18**, 250
- [13] G C Ruiz, E Reyes-Gomez, E J Hall, and V Freiche 2016 *J Vet. Intern Med* **30**, p1014
- [14] J G Albert and N Lubomierski 2013 *Video J. Encycl GI Endosc* **1** p419
- [15] N J Talley and N Vakil 2005 *Am J Gastroenterol* **100**, p2324
- [16] G A J Fransen, M J R Janssen, J W M Muris, R J F Laheij, and J B M J Jansen 2004 *Aliment Pharmacol Ther* **20** p1045
- [17] J H Hwang, A K Shergill, R D Acosta, V Chandrasekhara, K V Chathadi, G A Decker, D S Early, J A Evans, R D Fanelli, D A Fisher, K Q Foley, L Fonkalsrud, T Jue, M A Khashab, J R Lightdale, V R Muthusamy, S F Pasha, J R Saltzman, R Sharaf, and B D Cash 2014 *Gastrointest Endosc* **80** p221
- [18] S K Sarin, D C Valla, and R D Franchis 2011 *J Hepatol* **54** p1082
- [19] S A Ansar, M U N Iqbal, T A Khan, and S U Kazmi 2018 *Life Sci*
- [20] K Ramakrishnan and R C Salinas 2007 *Am Fam Physician* **76**, p1005
- [21] H Endo, E Sakai, T Higurashi, E Yamada, H Ohkubo, H Iida, T Koide, M Yoneda, Y Abe, M Inamori, K Hosono, H Takahashi, K Kubota, and A Nakajima 2012 *Dig. Liver Dis* **44** p833
- [22] M Mbengue, D Dia, M L Diouf, M L Bassène, S Fall, S Diallo, S Ndong, and A Pouye 2009 *Med Trop (Mars)* **69** p286
- [23] J Makker, N Karki, B Sapkota, M Niazi, and P Remy 2016 *Am J Case Rep* **17** p611