

A Study of Upper GI Endoscopy in a Rural Tertiary Care Centre of Pakistan

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Abstract:

Objective:

To determine the common indications, yield and findings of Upper Gastrointestinal Endoscopy (UGIE) in a rural setting of Pakistan

Patients and Methods:

Retrospective analysis of the endoscopy data of all 772 patients who underwent UGIE in Muhammad Medical College Hospital between 1st August 2009 and 31st July 2011.

Results:

Out of the total of 772 patients, there were 398 men (51.5%). The average age was 41 years (range 13 - 92). Therapeutic endoscopies comprised 27.3% (n = 211) of all UGIEs. All 561 patients who underwent diagnostic procedure were given choice to have UGIE done either under sedation or with pharyngeal anaesthesia only. Vast majority (n = 525; 93.5%) preferred sedation with Midazolam (mean dose 3 mg). Commonest indication for UGIE was acute upper gastrointestinal bleed (AUGIB) (n = 275; 35.6%), followed by dysphagia (n = 136; 17.6%) and upper abdominal pain (n = 126; 16.3%). The commonest finding was normal examination (n = 271; 35.1%), oesophageal varices (n = 206 [26.6%] - bleeding = 147, non-bleeding = 59;), carcinoma of oesophagus (n = 51; 6.6%), portal hypertensive gastropathy (n = 50; 6.4%) and peptic ulcer disease (n = 46; 6.2%). Commonest therapeutic procedure performed was endoscopic treatment of oesophageal varices (n = 182). No immediate complication was seen.

Conclusion:

In our setting, UGIE is a common and safe procedure. 93.5% patients would like to have a diagnostic UGIE done under sedation. AUGIB constitutes over 1/3 of all UGIE indications and oesophageal varices are the commonest abnormal findings, requiring endoscopic treatment.

Introduction:

Upper Gastrointestinal Endoscopy (UGIE) is a common investigation to investigate Gastrointestinal (GI) diseases. It is often also used to treat GI emergencies, such as acute upper GI bleed (AUGIB). With time, its use is becoming common in all parts of the world. However, in under privileged and poor rural areas of countries like Pakistan, it is still not widely available. Although endoscopy procedures had in the past been performed by one of the authors of this paper (SRM) in Mirpurkhas on a once weekly basis for nearly a decade, our purpose-built full time endoscopy unit was established in 2004 as the only such unit in the rural Sindh province. Mirpurkhas is the only 3rd city in the province to have such a unit.

Although internationally various guidelines for endoscopy units are available and quality assurance systems are in place, in Pakistan, there are no nationally agreed quality assurance programmes for endoscopy units. There are not many purpose-built units and no national guidelines are available to follow on any of the aspects

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of endoscopy. Recently Pakistan Society of Gastroenterology and GI Endoscopy (PSG&GIE) has acquired some data on activities at various endoscopy units nationally, but the outcome of this process has not yet been published.

AUGIB is a common GI emergency, with reported incidence of 100 per 1,000 per year.¹ Whereas in the west, peptic ulcer disease (PUD) is the commonest cause for this problem², in some of the centers within Pakistan, bleeding oesophageal varices (BOV) have been reported to be the commonest underlying cause for AUGIB.³ UGIE not only helps in diagnosis of AUGIB, but also has a very significant therapeutic role in its treatment. UGIE is also used to treat some other conditions such as oesophageal strictures.

The objective of this study was to determine the indications, yield, findings and clinically significant immediate complications of UGIE in our patients.

PATIENTS AND METHODS:

Retrospective analysis of the endoscopy records of all patients who underwent emergency and elective UGIE at Muhammad Medical College Hospital between 1st August 2009 and 31st July 2011 was performed. All patients referred by general practitioners and hospital doctors for UGIE with any indication were included. All endoscopies were done after taking informed written consent from the patients who were given written information about the investigation in local language (Urdu, with Sindhi translation as appropriate) beforehand. Patients who were consented for a diagnostic UGIE were given a choice between having the procedure done un-

der pharyngeal anaesthesia (PA) with 4% Lignocaine gargles and having sedation with Midazolam. The dose of midazolam was decided by the endoscopist on clinical grounds. All the procedures were performed by 2 endoscopists, using Olympus Videoendoscopes GIF 130 / 1T20 / XQ30 series. At least 2 qualified technicians were in attendance during the procedure. A female staff was also in attendance when there was a female patient. All patients had oxygen saturation monitored using pulse oximetry throughout the procedure. Those who were sedated had intravenous cannula inserted and were also given continuous oxygen inhalation throughout the procedure. In the absence of a national guideline available, our unit uses British Society of Gastroenterology's (BSG) September 2003 guidelines on "Safety And Sedation During Endoscopic Procedures" for our patients, with locally necessary amendments.⁴ Hospital's Research Ethics Committee's approval was obtained for this study (No. 140911/REC/046).

RESULTS:

Out of the total of 772 patients, there were 398 men (51.5%) and 374 women (48.5%). The average age was 41 years (range 13 - 92 years). Therapeutic endoscopies comprised 27.3% (n = 211) of all UGIEs. All 561 patients who underwent diagnostic procedure were given choice to have UGIE done either under sedation or with pharyngeal anaesthesia only. Vast majority (n = 525; 93.5%) preferred sedation with Midazolam (mean dose 3 mg; range 1 - 5 mg). Commonest indication for UGIE was AUGIB (n = 275; 35.6%), followed by dysphagia (n = 136; 17.6%) and upper abdominal pain (n = 126; 16.3%). *Table 1* gives a detailed account of all indications. The commonest finding was normal examination (n = 271; 35.1%), oesophageal varices (n = 206 [26.6%] - bleeding = 147, non-bleeding = 59), carcinoma of oesophagus (n = 51; 6.6%), portal hypertensive gastropathy (n = 50; 6.4%) and peptic ulcer disease (n = 46; 6.2%). *Table 2* shows all findings. Many patients had more than one finding. Commonest therapeutic procedure performed was endoscopic treatment of oesophageal varices (n = 182; 86.2%). *Table 3* summarises all therapeutic procedures performed. No immediate complication was seen.

DISCUSSION:

A well-equipped endoscopy unit dealing with all or most types of endoscopy procedures, including diagnostic and therapeutic UGIE should be available in all reasonable size general hospital with services available round the clock. However, such services are expensive and the skilled operators are not as widely available, particularly in the under privileged rural areas in countries like Pakistan. According to a recent report by World Bank, 17.2% of Pakistani population still lived under the poverty line in 2007-08, despite the fact that it was lowest rate in the history.⁵ Ours is a charity hospital, claiming only symbolic charges from affording patients for services. However, most hospitals are unable to provide such expensive services as they are out of the reach of the majority of particularly poor rural population. Although PSG&GIE has been trying hard to improve standards of GI services throughout the country, because of the lack of resources, it has not yet been able to

collect and publish even the basic national data on endoscopy units and their activities. Some centres, like ours, follow some other international clinical and quality assurance guidelines like that of BSG.⁴ Until robust data representing the practice of endoscopy in the country is available, the endoscopy centres should strive to achieve excellence by developing guidelines for themselves, and regularly audit their practices to ensure compliance. Our centre has been presenting various statistics on our unit's activities on a yearly basis in our symposia. However, publishing them will hopefully help not only us, but also other units and encourage them to do the same, resulting in compilation of a nation-wide data with time. AUGIB constituted over 1/3 (35.6%) of all our endoscopies indication. In another centre in Pakistan, it was well over half of all indications (57.4%) of UGIE performed.³ However, internationally, dyspepsia is the commonest indication for this investigation.⁶ The reason for UGIB being the commonest indication for our population is multi-fold. Cirrhosis is a common disease in Pakistan, mainly secondary to the high incidence of hepatitis C virus (HCV) infection in our population.⁷ However, anecdotally there is a lack of awareness on the indications of UGIE not only among general population, but also medical practitioners, and many patients do not get referred for this investigation. The fear of discomfort caused by UGIE may also be a factor for poor referral rate. This is not surprising and has been shown to be the case in developed countries towards the end of last century.⁸ In our study, dyspepsia constituted only 5.5% of all indications. "Dyspepsia" is a non-specific term, often described as "chronic or recurrent pain in the upper abdomen, upper abdominal fullness and feeling full earlier than expected when eating".⁹ However, National Institute of Clinical Excellence (NICE) of the UK also describes it as "a spectrum of upper gastrointestinal symptoms, including epigastric pain and heartburn".¹⁰ Including these would mean 26.8% of all our patients had this indication for UGIE.

A normal (often referred to as "negative") endoscopy is often the commonest finding in unselected UGIE lists.⁸ This was also the commonest finding (56% of all endoscopies) in another study from another centre in Pakistan, investigating dyspepsia only.¹¹ However, another centre in Pakistan had oesophageal varices as the commonest finding (43.6%) with normal endoscopy comprising only 16.4% of all UGIE.³ We wonder if their normal findings were so low because of the referral bias, as also discussed above. In our study normal endoscopy was the commonest (35.1%) finding at UGIE, which is comparable to other centres in the world.^{12,13}

UGIB from portal hypertension was a close second finding in our study (33.9% of all UGIE). Not surprisingly BOV was the commonest abnormality found (n=147). This is consistent with some other centres within Pakistan.^{3,14} However, the commonest aetiology of AUGIB in the west remains PUD.² PUD, bleeding or otherwise, was found in only 46 (6.2%) of our patients. Upper GI cancers (oesophageal=51; gastric=12) was also common (total = 63 - 8.1%). All oesophageal cancers were squamous cell carcinoma. Another study from Multan,

Pakistan, found it in 3.2% of all patients who presented with dyspepsia¹¹, and another reported it to be 10%.¹⁵ Over a quarter (27.3%) of all UGIE were therapeutic in our study. Vast majority of them (86.2%) were done to treat BOV, which was as expected given that BOV was the commonest abnormality in this study. There were some other therapeutic procedures performed - the second commonest being dilatation of oesophageal stricture (9.4%).

Although our study is limited in that it was not a prospective study, it is still one of the largest studies published on this topic in Pakistan. It is hoped that it would again lead the national societies like PSG&GIE to make efforts to gather data on a national basis and come up with nationally agreed guidelines on all aspects of UGIE.

In conclusion, UGIE endoscopy, when performed under adequate clinical environment, is a safe procedure. Vast majority of patients would prefer to have this procedure performed under sedation. Acute UGIEB is the commonest indication and BOV is the commonest abnormality found. Endoscopic treatment of BOV is the commonest therapeutic procedure performed.

Table 1: Indications of Upper GI Endoscopy

Indication	Number	%age
Upper GI Bleed	275	35.6
Dysphagia / odynophagia	136	17.6
Abdominal pain	126	16.3
Persistent vomiting	47	6
Other Dyspepsia	43	5.5
Heartburn	38	4.9
Varices surveillance in cirrhotic	22	2.8
Suspected Coeliac disease	15	1.9
Anaemia	12	1.5
Miscellaneous*	58	7.5
Total	772	100

Miscellaneous (all less than 10 in number) included variceal eradication, follow-up endoscopies for ulcers - bleeding and non-bleeding, non-cardiac chest pain, family history of cancers, mouth ulcers and nocturnal cough

Table 2: Findings at endoscopy

Diagnoses	Number	%age
Normal	271	35.1
Portal Hypertension	262	33.9
• Oesophageal varices	206	26.6
- Bleeding	147	19
- Non-bleeding	59	7.6
• Portal Hypertensive Gastropathy	50	6.4
- Non-bleeding	6	0.7
• Gastric varices		
- Bleeding	3	0.3
- Non-bleeding	3	0.3

Oesophageal carcinoma	51	6.6
Peptic Ulcer	46	6.2
• Duodenal ulcer	24	3.1
• Gastric ulcer	22	2.8
Gastritis	45	5.8
Oesophagitis	25	3.2
Hiatus Hernia	24	3.1
Mellory-Weiss Tear	22	2.8
Duodenitis	14	1.8
Gastric Carcinoma	12	1.5
Candida oesophagitis	12	1.5
Benign oesophageal stricture	6	0.7
Barrett's oesophagus	2	0.2
Achalasia of Cardia	1	0.1
Uraemic Gastropathy	1	0.1

Table 3: Therapeutic Procedures

Procedures	Number	%age
Variceal Band Ligation	83	39.3
Variceal Injection Sclerotherapy	99	46.9
Dilatation of oesophageal strictures	20	9.4
Injection Sclerotherapy of bleeding ulcer	6	2.8
Cyanoacrylate injection of gastric varices	3	1.4
Total	211	100

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