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 (UGE) in a rural setting of Pakistan.

Patients and Methods: Retrospective analysis of the endoscopy data of all 772 patients who underwent UGE 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 UGEs. All 561 patients who underwent diagnostic procedure were given choice to have UGE 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 UGE 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, UGE is a common and safe procedure. 93.5% patients would like to have a diagnostic UGE done under sedation. AUGIB constitutes over 1/3 of all UGE indications and oesophageal varices are the commonest abnormal findings, requiring endoscopic treatment.

Introduction:
Upper Gastrointestinal Endoscopy (UGE) 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 programs for endoscopy units. There are not many purpose-built units and no national guidelines are available to follow on any of the aspects of endoscopy. Recently Pakistan Society of Gastroenterology (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 problem, in some of the centers within Pakistan, bleeding oesophageal varices (BOV) have been reported to be the commonest underlying cause for AUGIB.2 UGE not only helps in diagnosis of AUGIB, but also has a very significant therapeutic role in its treatment. UGE 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 UGE in our patients.

Patients & Methods:
Retrospective analysis of the endoscopy records of all patients who underwent emergency and elective UGE 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 UGE 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 UGE were given a choice between having the procedure done under pharyngeal anaesthesia (PA) with 4% Lidocaine gargles and having sedation with Midazolam. The dose of midazolam was decided by the endosco-
most hospitals are unable to provide such expensive ser-
charges from affording patients for services. However,
history.
2007
of Pakistani population still lived under the poverty line in
stan. According to a recent report by World Bank, 17.2% in the under privileged rural areas in countries like Paki-
skilled operators are not as widely available, particularly
size general hospital with services available round the proce-
due. A female staff was also in attendance when there was a female patient. All patients had oxygen saturation
monitored using pulse oximetry throughout the proced-
ure. Those who were sedated had intravenous cannula inserted and were also given continuous oxygen in-
halation throughout the procedure. In the absence of a
ational guideline available, our unit uses British Soci-
ey of Gastroenterology’s (BSG) September 2003 guide-
lines on “Safety And Station During Endoscopic Proce-
dures” for our patients, with locally necessary amend-
ments. 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 (range13 - 92 years). Therapeutic endos-
copies comprised 27.3% (n = 211) of all UGIEs. All 561
patients who underwent diagnostic procedure were giv-
en 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 dys-
phagia (n = 136; 17.6%) and upper abdominal pain (n = 126; 16.3%). Table 1 gives a detailed account of all in-
dications. The commonest finding was normal examina-
tion (n = 271; 35.1%), oesophageal varices (n = 206
[26.6%] - bleeding = 147, non-bleeding = 59), carcino-
oma of oesophagus (n = 51; 6.6%), portal hypertensive
gastrophy (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 oe-
sophageal varices (n = 182; 86.2%). Table 3 summaris-
es 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 Paki-
stan. 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 his-
tory. Ours is a charity hospital, claiming only symbolic
charges from affording patients for services. However,
most hospitals are unable to provide such expensive ser-
ices as they are out of the reach of the majority of par-
ticularly poor rural population.

Although PSG&GIE has been trying hard to improve
standards of GI services throughout the country, be-
cause of the lack of resources, it has not yet been able to
collect and publish even the basic national data on en-
doscopy 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. How-
ever, 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 endosco-
pies 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. 5 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, anec-
dotally there is a lack of awareness on the indications of
UGIE not only among general population, but also medi-
cal 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 de-
volved countries towards the end of last century. 8
In our study, dyspepsia constituted only 5.5% of all indi-
cations. “Dyspepsia” is a non-specific term, often de-
scribed as “chronic or recurrent pain in the upper abdo-
men, upper abdominal fullness and feeling full earlier
than expected when eating”. 9 However, National Insti-
tute of Clinical Excellence (NICE) of the UK also de-
scribes it as “a spectrum of upper gastrointestinal sym-
toms, including epigastric pain and heartburn”. 10 Includ-
ing 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 endos-
copies) in another study from another centre in Paki-
stan, 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 bi-
as, as also discussed above. In our study normal en-
doscopy 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 find-
ing 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. However, the commonest aetiology of AUGIB in the west remains PUD. 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 dyspepsia, and another reported it to be 10%.

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

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

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

<table>
<thead>
<tr>
<th>Diagnoses</th>
<th>Number</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>271</td>
<td>35.1</td>
</tr>
<tr>
<td>Portal Hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oesophageal varices</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bleeding</td>
<td>262</td>
<td>33.9</td>
</tr>
<tr>
<td>- Non-bleeding</td>
<td>206</td>
<td>26.6</td>
</tr>
<tr>
<td>- Variceal Band Ligation</td>
<td>147</td>
<td>19</td>
</tr>
<tr>
<td>- Variceal Injection Sclerotherapy</td>
<td>59</td>
<td>7.6</td>
</tr>
<tr>
<td>- Gastric varices</td>
<td>50</td>
<td>6.4</td>
</tr>
<tr>
<td>- Portal Hypertensive Gastropathy</td>
<td>6</td>
<td>0.7</td>
</tr>
<tr>
<td>- Injection Sclerotherapy of bleeding ulcer</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>- Injection Sclerotherapy of gastric varices</td>
<td>3</td>
<td>0.3</td>
</tr>
<tr>
<td>Oesophageal carcinoma</td>
<td>51</td>
<td>6.6</td>
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<tr>
<td>Peptic Ulcer</td>
<td></td>
<td></td>
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<tr>
<td>- Duodenal ulcer</td>
<td>46</td>
<td>6.2</td>
</tr>
<tr>
<td>- Gastric ulcer</td>
<td>24</td>
<td>3.1</td>
</tr>
<tr>
<td>Gastritis</td>
<td>45</td>
<td>5.8</td>
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<tr>
<td>Oesophagitis</td>
<td>25</td>
<td>3.2</td>
</tr>
<tr>
<td>Hiatus Hernia</td>
<td>24</td>
<td>3.1</td>
</tr>
<tr>
<td>Mallory-Weiss Tear</td>
<td>22</td>
<td>2.8</td>
</tr>
<tr>
<td>Duodenitis</td>
<td>14</td>
<td>1.8</td>
</tr>
<tr>
<td>Gastric Carcinoma</td>
<td>12</td>
<td>1.5</td>
</tr>
<tr>
<td>Candida oesophagitis</td>
<td>12</td>
<td>1.5</td>
</tr>
<tr>
<td>Benign oesophageal stricture</td>
<td>6</td>
<td>0.7</td>
</tr>
<tr>
<td>Barrett’s oesophagus</td>
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<td>0.2</td>
</tr>
<tr>
<td>Achalasia of Cardia</td>
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<td>0.1</td>
</tr>
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Table 3: Therapeutic Procedures

<table>
<thead>
<tr>
<th>Procedures</th>
<th>Number</th>
<th>%age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variceal Band Ligation</td>
<td>83</td>
<td>39.3</td>
</tr>
<tr>
<td>Variceal Injection Sclerotherapy</td>
<td>99</td>
<td>46.9</td>
</tr>
<tr>
<td>Dilatation of oesophageal strictures</td>
<td>20</td>
<td>9.4</td>
</tr>
<tr>
<td>Injection Sclerotherapy of bleeding ulcer</td>
<td>6</td>
<td>2.8</td>
</tr>
<tr>
<td>Cyanoacrylate injection of gastric varices</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>211</td>
<td>100</td>
</tr>
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</table>
References:


