

SHORT COMMUNICATION

Gastrointestinal endoscopy at Amana Municipal Referral Hospital in Tanzania: reasons for referral and findings

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Abstract

Upper gastrointestinal endoscopy is a medical procedure for visualizing and treating diseases in the upper gastrointestinal tract. It is useful in the surveillance, diagnosis and treatment of acute conditions such as gastrointestinal haemorrhages, benign, malignancies or inflammatory conditions. Because of unavailability of specialist doctors, open access endoscopy referral system is the main system practiced in Tanzania. This study was carried out to investigate the appropriateness of referrals for endoscopy and to determine the endoscopic findings at Amana Municipal Referral Hospital in Tanzania. This cross-sectional study was carried out from March 2010 to June 2011 involved patients referred for endoscopy. Demographic characteristics, reasons for referral and endoscopic findings were recorded for each patient. A total of 393 patients were involved in the study. The mean age of the study subjects was 47.3±17.4 years. The main reasons for referral were epigastric pain (57%), vomiting blood (23%) and difficult in swallowing (20%). The most common endoscopic findings were gastritis (57.2%), oesophagitis (10.2%) and gastric tumours (6.5%). The main reasons for endoscopy referrals at Amana Municipal Referral Hospital are epigastric pain, difficult in swallowing and vomiting blood. The normal endoscopy findings observed falls within normal range. These findings are important for further development of the endoscopy unit, for streamlining services, training of the required skills, and for planning.

Keywords: endoscopy, upper gastrointestinal bleeding, oesophageal cancer, oesophageal varices, dysphagia, Tanzania

Upper gastrointestinal endoscopy is a medical procedure for visualizing the lumen of the oesophagus, gastrium, duodenum and the biliary tracts. Gastrointestinal endoscopy is important for the treatment, diagnosis and surveillance of acute conditions such as gastrointestinal haemorrhages, malignancies or inflammatory conditions (Greenwald, 2014). In Tanzania, as in many other developing countries, endoscopy facilities are scarce in public-hospitals (Ismaila & Misauno, 2013), as a result open access endoscopy referral system is widely practiced. With an open access system, endoscopy referrals are based on the presence of indications identified at primary hospitals regardless of a prior medical consultation from gastroenterologist (Hassan *et al.*, 2007). The referral criteria for open access endoscopy include upper gastrointestinal bleeding, gastrointestinal malignancy, gastro oesophageal reflux disease (GORD), and nonresponse to initial therapy, treatment follow-up for resistant *Helicobacter pylori*, confirmatory biopsy in celiac diseases and screening for varices in chronic liver disease (NICE, 2007). Non-erosive gastritis, duodenitis and esophagitis, as well as surveillance of benign gastric conditions or gastritis in gastric resection are not indications for endoscopy (Hassan *et al.*, 2007; NICE, 2007).

Amana Municipal Referral Hospital in Dar es Salaam, Tanzania acquired its endoscopy unit in 2010. At the time of this study, the unit was mainly performing diagnostic procedures such as

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oesophago-gastroduodenoscopy rather than interventional ones. This study was therefore, carried out to investigate the appropriateness of referrals at Amana Municipal Referral Hospital because open endoscopy referral system may have a major impact on service utilization and efficiency. We further investigated endoscopic findings at the endoscopy unit, in order to streamline services and for further infrastructure and human resource development.

This was a cross sectional study that was conducted at Amana Municipal Referral Hospital in Dar es Salaam, Tanzania. The hospital has 300 in-patient bed capacity and serves 800-1200 out-patients per day. Its endoscopy unit attends 2-4 patients per day. The study involved patients who underwent upper gastrointestinal endoscopy between March 2010 and June 2011.

Patients referred for upper gastrointestinal endoscopy during the study period were enrolled and had their demographic characteristics analysed. A data sheet was used to extract information from patients' referral letters and from the endoscopy report forms. Demographic characteristics, reasons for referral and endoscopic examination findings were recorded. Patients who did not consent or they were too sick to consent were excluded from the study.

The study was initially approved by the Institutional Review Board of the Hubert Kairuki Memorial University. Permission to conduct the study was granted by the Amana Municipal Referral Hospital administration. A written informed consent was sought from individual participants.

Data was analysed using IBM Statistical Package for the Social Sciences version 21.0 (IBM SPSS, Inc, Chicago, IL, USA). Proportions, means and standard deviations were used to describe variables. A p-value of <0.05 was considered to show a significant association.

Table 1: Age and sex distribution of the study population (N =393)

Age groups (years) *	Sex	
	Female	Male
15-24	17	21
25-34	32	41
35-44	35	37
45-54	30	42
55-64	24	37
65-74	15	29
75-84	8	20
>84	0	5
Total	161	232

*Categorization based on 10 year groupings (<http://www.abs.gov.au/>)

A total of 393 patients were involved in the study. The mean age of the study subjects was 47.3±17.4 years (range = 16-93 years). There was a slight male preponderance and the majority of the patients were aged below 64 years (Table 1). The most frequent reasons for referral were epigastric pain (57%), vomiting blood (23%) and difficult in swallowing (20%). Gastritis, esophagitis, peptic ulcers, and GORD constituted 76% of those who were referred due to epigastric pain while 14% had normal endoscopy findings. Oesophageal varices and gastritis were the commonest endoscopic findings among the referred patients due to history of vomiting of blood. Oesophageal cancer was the commonest reason among patients referred due to history of difficult in swallowing (Table 2).

Table 2: Reasons of referral and endoscopy examination findings (N = 377)

Endoscopy diagnoses	Reasons for referral to the endoscopy unit			Total
	Difficult swallowing	Epigastric pain	Vomiting blood	
Gastritis	5	123	24	152
Esophagitis	6	22	5	33
Boerhaave syndrome	0	0	1	1
Duodenal ulcer	0	2	6	8
Oesophageal- candidiasis	7	2	2	11
Oesophageal tumour	49	0	0	49
Oesophageal varices	0	3	31	34
Gastric tumour	1	10	3	14
GORD	0	14	2	16
Hiatal hernia	2	3	1	6
Hypopharyngeal tumour	4	0	0	4
Kaposi's sarcoma lesion	0	0	1	1
Laryngeal tumour	1	0	0	1
Ménétrier's disease	0	1	0	1
Normal	2	31	4	37
Gastric ulcer	0	4	5	9
	77	215	85	377

Comparable to previous studies in Tanzania and in the Netherlands we found main reasons for referral to be epigastric pain (dyspepsia), vomiting blood and difficult in swallowing (Adang *et al.*, 1995; Ayana *et al.*, 2014). According to the American Society for Gastrointestinal Endoscopy (ASGE) referral criteria, epigastric pain is an indication for endoscopy after appropriate trial of pharmacological therapy fails, when the dyspepsia is associated with other serious organic disease or when patients are above 45 years of age (Minoli *et al.*, 1995). To minimize overuse and adverse outcome of open access endoscopy referral systems screening criteria were proposed (Minoli *et al.*, 1995; NICE, 2007).

Vomiting blood was the second commonest reason for referral. According to previous studies in Tanzania, vomiting blood is mainly caused by oesophageal varices and carries high mortality (Suba *et al.*, 2010). It is a priority indication for endoscopy according to ASGE and the National Institute for Clinical Excellence criteria (Minoli *et al.*, 1995; NICE, 2007). A lesser proportion of individuals in this group who had normal endoscopy findings are probably representing an obscured gastrointestinal bleeding. Obscured gastrointestinal bleeding requires further investigations such as computer tomography scanning, angiography, radionuclide scanning and capsular endoscopy to locate the source of bleeding (Bresci, 2009). Similar to vomiting blood, difficult in swallowing is a strong indication of referral for endoscopy. Upper gastro-intestinal tumours were the main cause of difficult in swallowing. We found a higher proportion of upper gastrointestinal tumours than in the studies in the Netherlands and Portugal (Adang *et al.*, 1995; Mangualde *et al.*, 2011). A previous study in Tanzania demonstrated comparable findings but with slight higher prevalence of the gastric cancers (Ayana *et al.*, 2014). Probably this higher proportion of malignancies could be attributed to pooling of patients to the few endoscopy facilities available.

We also found laryngeal and hypopharyngeal tumours and oesophageal candidiasis referred for endoscopy. Both laryngeal and hypopharyngeal tumours were inappropriately referred for endoscopy for initial diagnostic assessment (Marioni *et al.*, 2006). A direct referral to an otorhinolaryngologist would have been more appropriate than an elective referral for upper gastrointestinal endoscopy. In the same way, a good prediction of oesophageal candidiasis could be

achieved by clinical evaluation alone, endoscopy should therefore be reserved for failure of response to initial therapy (Parente & Cernuschi, 1989). Up to a quarter of individuals who undergo endoscopy examination has been found to be normal. Normal findings have been reported to be commoner in dyspepsia and represent an initial stage of inflammatory process which is not yet visible on endoscopy (Johnsen *et al.*, 1991). Our normal endoscopic examination findings were within acceptable range (Kerrigan *et al.*, 1990).

Limitations of this study were poor recording, poor documentation on referral notes and storage which resulted into loss of data. For the same reasons, it was not possible to establish whether or not appropriate pharmacological treatments were offered prior to referrals for epigastric pain and whether the referrals were justifiable.

In conclusion, the findings of this study indicate that the main reasons for endoscopy referrals at Amana Hospital are epigastric pain, difficult in swallowing and vomiting blood. The normal endoscopy findings observed falls within normal range. These findings are important for further development of the endoscopy unit, for streamlining services, training of the required skills, and for planning.

Competing interests

The authors declare no conflict of interest.

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