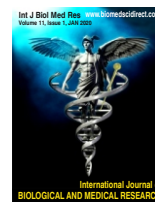




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### Original article

## Endoscopic Profiling of Patients with Dyspepsia in North-Western Nigeria. A four-year review

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#### ABSTRACT

**Background:** Dyspepsia is a symptom complex which is poorly characterized and thought to originate from anatomic or functional disorders of the upper gastrointestinal tract. It is a common complaint among patients in both general and gastroenterology practice in Nigeria. Upper gastrointestinal endoscopy remains the gold standard for the diagnosis of dyspepsia. **Materials and Methods:** This is a retrospective study carried out at the Gastroenterology Unit, Department of Internal Medicine Usmanu Danfodiyo University Teaching Hospital, Sokoto from January 2013 to December, 2016. We aim to profile the endoscopic finding of our patients in Sokoto, North Western Nigeria over a four-year period. **Results:** A total of 1597 had gastroscopy during the study period. There were 860 (53.9%) males while 737 (46.1%) were females, with the male to female ratio of 1.2:1. The mean age of patients was 42 with SD  $\pm$  16, and the age range of (15-87) years. The peak age incidence occurred within age range of 40-49 which accounted for 25%. The commonest endoscopic findings were; Gastritis 564 (35.3%), GORD 177 (11.1%), Oesophageal varices 145 (9.1%), gastric ulcer 86 (5.4%) and duodenal ulcer 45 (2.8%). Suspected upper gastrointestinal malignancies were 50 (3.1%), ie 16 (1.0%) oesophageal and 34 (2.1%) gastric. The commonest clinical indications were PUD 64.2% (1025), followed by Upper GI bleeding 10.5% (167), GORD 10% (159) and chronic liver disease 8% (128). **Conclusion:** In this study, gastritis, GORD and oesophageal varices were the commonest endoscopic findings while suspected PUD was the commonest clinical indication for endoscopy.

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### 1. Introduction

Dyspepsia encompasses a constellation of symptoms like nausea, vomiting, early satiety, bloating sensation, epigastric burning sensation and pain. Robust clinical definitions for dyspepsia remain evasive and this term and its various qualifiers have been interpreted differently by both physicians and patients alike for years. It causes huge economic burden to patients and to the communities. It is a very common complaint among patients in both general and gastroenterology practice in Nigeria and the world at large with a prevalence of 25-40% [1]. Dyspepsia is also linked to serious gastrointestinal pathological states like malignancy, ulcers and strictures.

Endoscopy has undoubtedly revolutionized the diagnosis and treatment of gastrointestinal Tract (GIT) diseases world over.

It offers direct visualization and image acquisition of the pathology, permits collection of biopsy specimens and enables therapeutic interventions. These features have elevated endoscopy to a Gold standard in the investigation of most GIT conditions [2, 3].

It is recommended for those who fail to respond to medical treatment, those who complain from alarm symptoms (e.g. anemia, dysphagia, and weight loss or voice changes) and those with long-standing gastroesophageal reflux disease (GORD) to evaluate the presence of metaplasia or Barrett's esophagus [4]. Upper GI endoscopy is recommended for evaluation of patients with suspected peptic ulcer disease because it provides an opportunity to visualize the lesion directly. Upper gastrointestinal (UGI) endoscopy is more accurate than radiological investigations in diagnosis of UGI tumors, and it offers the opportunity for early detection of these tumors in suspected patients. It is recommended for cancer screening in old patients who complain of unexplained and persistent recent-onset dyspepsia.

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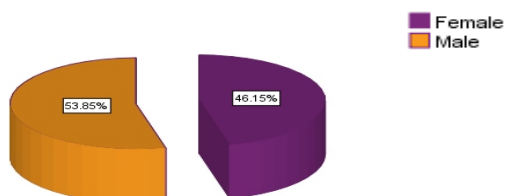
**Materials and Methods:**

This was a hospital-based retrospective study carried out at the Medicine Department of Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria. Patients with dyspepsia with or without alarm symptoms attending the General Outpatient and Gastroenterology Unit clinics and nearby hospitals were referred for upper gastrointestinal endoscopy as part of their workup. Each consenting patient was asked to fast overnight for at least 8 hours and at endoscopy the pharynx was anaesthetized with 10% xylocaine spray. The shaft of the endoscope was lubricated with K-Y gel and endoscopy was performed on each patient using a forward viewing fibre-optic Olympus GIFQ-140 series video gastroscope. Conscious sedation was routinely not done before the procedure as is the practice in this centre except in exceptionally restive patients where intravenous midazolam was administered according to need. The endoscopy suite register was used in retrieving biometric and clinical profile of 1597 patients that had endoscopy within the study period (January 2013-December 2016) and findings collated. These data included demographic data, clinical presentation and endoscopic findings. The data was validated using Microsoft excel and entered into SPSS version 20 (Chicago IL) for windows; for statistical analysis. The data was then analyzed.

**Results:**

A total of 1597 patients had endoscopy done during the study period. Figure 1, shows the percentage males and females exposed to GIT endoscopy where 860 (53.9%) were males, 46.1% while 737 (46.1%) were females, with the male to female ratio of 1.2:1. The mean age of patients was 42 with SD ± 16, and the age range was 15-87years respectively. Table1 indicates the age distribution of patients, the peak incidence was seen within the age range of 40-49 (fourth decade of life), which accounted for 25% of patients within the study period. Ten of the patients were given conscious sedation by a trained anaesthetic. Gastritis accounted for 564(35.3%), followed by GORD 177 (11.1%), Oesophageal varies 145(9.1%), gastric ulcer 86 (5.4%) and duodenal ulcer 45 (2.8%). Suspected upper gastrointestinal malignancies was 50(3.1%),16(1.0%) oesophageal and 34 (2.1%) gastric. The commonest clinical indications were PUD 64.2% (1025), followed by Upper GI bleeding 10.5% (167), GORD 10 % (159) and chronic liver disease 8% (128).

**Figure 1:**



**Figure 2:**

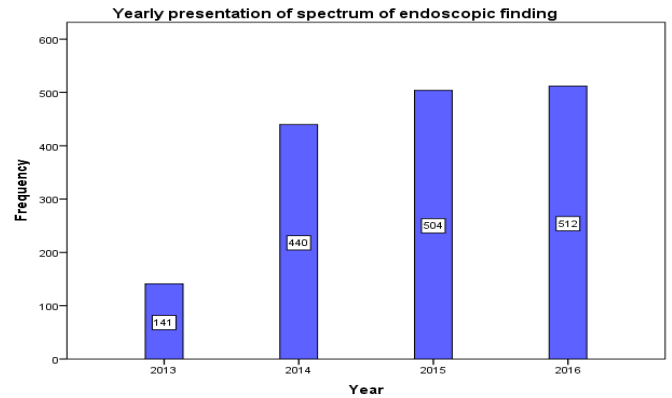


Figure 2 showed the annual trend of the total endoscopy carried out during the study period. It showed a serial and steady rise in subjects presenting for the procedure signifying awareness and acceptance of the procedure by patients.

**Table 1: Age Distribution of Endoscopic Finding**

Age group	Frequency	Percent
<20	91	5.7
20-29	273	17.1
30-39	309	19.3
40-49	399	25.0
50-59	257	16.1
60-69	166	10.4
70-79	79	4.9
sXP	23	1.4
<b>Total</b>	<b>1597</b>	<b>100</b>

**Table 2: Distribution of Endoscopic Findings**

Findings	Frequency	Percent(%)
<b>Oesophageal findings</b>		
GORD	177	11.1
Varices	145	9.1
Candida	28	1.8
Hiatus hernia	143	9.0
ÇİŃŃÓĹÉÓ ÓİÖŃĹİ	1	0.1
Malignancy	16	1.0
Achalasia cardia	9	0.6
	<b>519</b>	<b>32.7</b>
<b>Gastric findings</b>		
Gastritis	564	35.3
Erosions	96	6.0
Ulcer	86	5.4
Polyp	8	0.5
Gastric atrophy	7	0.4
Malignancy	34	2.1
GOO	4	0.3
	<b>799</b>	<b>50</b>
<b>Duodenal findings</b>		
Duodenitis	82	5.1
Duodenal ulcer	45	2.8
Duodenal erosion	11	0.7
Duodenal polyp	4	0.3
	<b>142</b>	<b>8.9</b>
<b>Normal Upper GI</b>	138	8.6
<b>Total</b>	1597	100

**Table 3: Distribution of Clinical Indication**

INDICATION	Frequency	Percent
PUD	1025	64.2
Upper GI bleeding	167	10.5
GORD	159	10
CLD	128	8
Abdominal pain	18	1.1
Gastric Ca	18	1.1
Dysphagia	12	0.8
Oesophageal Ca	11	0.7
Anaemia	6	0.4
GOO	6	0.4
Recurrent vomiting	6	0.4
Chest pain	4	0.3

IBD	1	0.1
Weight loss cause	2	0.1
Missing values	34	2.1
<b>Total</b>	<b>1597</b>	<b>100</b>

PUD -Peptic ulcer disease	CLD -Chronic liver disease
GOO -Gastric outlet obstruction	IBD -Inflammatory bowel disease

## Discussion

The Rome IV criteria define dyspepsia as one of the following three symptoms for three months within the initial six months of symptom onset ie postprandial fullness, early satiety and epigastric pain or burning [5]. It is a very common complaint among patients in both general and gastroenterology practice. Clinical judgement alone is unsatisfactory and unreliable in confirming the aetiology of dyspeptic symptoms which exists between the clinical presentations of the disease conditions causing dyspepsia. Because structural upper gastrointestinal tract disease, such as peptic ulcer, erosive oesophagitis, luminal strictures and malignancy can cause dyspepsia, upper GI endoscopy is the diagnostic procedure of choice to differentiate patients with organic from those with Functional dyspepsia [6]. The present study was focused to evaluate the spectrum of upper gastrointestinal endoscopic findings in patients with dyspepsia with or without alarm symptoms. Endoscopic facilities became available in our study location only about a decade ago with only two available trained gastroenterologists thus this study is the first of its kind in our study location. In our study, a total of 1597 patients had endoscopy performed during the study period. Figure 2 Indicated the annual trend of endoscopic produce carried out. Endoscopy which is an invasive procedure was not easily accepted by most patients despite adequate counselling mainly from the fear of its induction of nausea, injury (bleeding and perforation) poor resources. However, there was a serial and steady acceptance of the procedure as most patients realized they had better knowledge and clinical response following drug therapy after the procedure. Kamalakannan Rajendran et al [7] in India reported a total of 300 upper Gi endoscopies over a three-year period in patients with symptoms of dyspepsia and its relation to alarm symptoms. Several centres in Nigeria have reported various spectra of endoscopic findings among patients referred for upper GI endoscopy [8, 9].

In our study, male preponderance was higher (53.9% (860/1597) were males, 46.1% (737/1597) were females) with the male to female ratio of 1.2:1 which is in concordance with studies by Gado et al [10] and Thompson et al [11] though other studies reported a female preponderance. The reason for male preponderance in our study area is not clearly understood but it may well be that men are known to be more economically viable and

women known to be dependent on men in African cultural set ups. The mean age of patients was 42 with SD  $\pm$  16, and the age range of 15-87years respectively. Majority of our study patients were in their fourth decade of life (399|25.0%) which is in concordance with some studies done in Nigeria [8, 9].

Presumptive diagnosis of peptic ulcer disease 1025(64.2%) was the commonest indication for requesting for upper gastrointestinal endoscopy.

In our study, the highest percentage of endoscopic findings is seen in stomach 799 (50%) the oesophagus 519 (32.7%), duodenum 142 (8.9%) while 138 (8.6%) had normal endoscopic findings and were classified as Non-ulcer or Functional dyspepsia. The most common pathology encountered was gastritis 564 (35.3%), reflux oesophagitis 177 (11.1%) then oesophageal varices which is similar to the findings of Mubarik et al [12] in India. Several studies in Nigeria [13, 14] found gastritis as the commonest endoscopic findings followed by GORD, a troublesome chronic disorder also associated with a huge economic burden and decreased quality of life. It has been suggested that there is an increasing trend in the prevalence over the last two decades. It is viewed as a disease of the Western world however recent studies in Nigeria suggests that the disease is actually common amongst negroes not as was previously thought [15, 16]. Interestingly oesophageal varices followed closely 145(9.1%) This might be related to 167(10.5%) patients whose clinical indication for endoscopy was upper gastrointestinal bleeding and 128 (8.0%) who presented for endoscopic screening for chronic liver disease It is a known fact that ruptured oesophageal varices is a leading cause of upper GI bleeding in Nigeria [17] and chronic HBV/HCV are the commonest causes of CLD which are endemic in Nigeria [18, 19]. Upper gastrointestinal cancers are not uncommon in Nigeria. In our study 50(3.1%) were suspected cases of malignancies 16(1.0%) oesophageal 34 (2.1%) gastric. Tijjani et al [20] in Kano presented similar findings as in this study. Upper gastrointestinal polyps 8 gastric and 4 duodenal which are commonly asymptomatic and rare in blacks were seen during endoscopy. They appear to have been an incidental finding however proton pump inhibitors medications are readily available over the counter medications in Nigeria. Data is conflicting on the association of gastric polyp and proton pump inhibitors.

**Conclusion:** Most symptoms referred to the upper gastrointestinal tract are wrongfully presumptively misdiagnosed as peptic ulcer disease. Upper gastrointestinal endoscopy is the best tool investigating for evaluating dyspepsia. Though it is an invasive procedure and involves huge financial burden, it is highly recommended in dyspeptic patients.

Delays in provision of endoscopic services, lack of endoscopic equipment, inadequate scope maintenance and disinfection as well as shortage of trained staff possess a great challenge in most health institutions across most of sub Saharan Africa including Nigeria.

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