

# Sociodemographic and Diagnostic Aspects of Esophageal Disease in Ouagadougou

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## Abstract

Esophageal pathologies are a common reason for consultation and endoscopic examination. However, their characterization remains insufficiently documented. The aim of our study was to investigate esophageal pathology in Ouagadougou. **Materials and Methods:** This was a cross-sectional and analytical study conducted in three health centers in Ouagadougou over five years. We collected the records of patients with esophageal involvement on upper gastrointestinal endoscopy (UGE). Sociodemographic, clinical, and endoscopic data were gathered from endoscopy and histology reports. **Results:** A total of 4216 patients were included. The mean age of patients was 43.7 years, ranging from one year to 92 years. The sex ratio was 0.97. The main indications for UGE were epigastric pain (47.4%), regurgitation (14.4%), and heartburn (13.9%). Endoscopically, hiatal hernia was the most common lesion, observed in 2555 patients (60.6%), followed by peptic esophagitis, recorded in 2217 patients (52.6%). Regarding tumor pathologies, they were dominated by squamous cell carcinoma, accounting for 58% of cases, while adenocarcinoma made up 42%. Malignant esophageal tumors were rare in our series, but the risk increased significantly from the age of 50 (OR = 12.3; p = 0.020) and were more frequent in men (OR = 2.93; p = 0.023; IC: 1.14 - 7.55) (Men: tumor: 17, no tumor: 2061; Women: tumor: 6, no tumor: 2132). **Conclusion:** Esophageal pathology is increasingly common. It is dominated by hiatal hernias and peptic esophagitis in our context, confirming the growing impact of gastroesophageal reflux. Conversely, esophageal cancers appear to be uncommon but increase with age. Upper digestive endoscopy thus remains essential for the early identification

of lesions related to reflux, preventing their complications and detecting neoplastic forms at an early stage.

## Keywords

Esophageal Pathology, Digestive Endoscopy, Hiatal Hernia, Esophagitis, Ouagadougou

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## 1. Introduction

Esophageal pathologies make up a significant portion of digestive disorders observed in clinical practice. Their diagnosis relies primarily on upper digestive endoscopy. Access to endoscopic examinations remains limited in many African countries due to insufficient availability of equipment, the high cost of procedures, and the lack of specialized personnel [1].

In sub-Saharan Africa, most published studies have focused mainly on esophageal cancer or complications of portal hypertension, leaving little recent data on the spectrum of esophageal lesions [2] [3]. In an urban context undergoing nutritional transition, it is likely that benign conditions related to reflux are becoming more common. This increase is explained by the rapid change in dietary habits, characterized by a growing consumption of foods high in fats, sugars, and ultra-processed products. The progressive sedentary lifestyle, linked to urbanization and changes in living habits, also contributes to the increase in overweight and abdominal obesity, which are promoting factors for gastroesophageal reflux. Furthermore, sugary and carbonated drinks, widely available in urban areas, encourage the relaxation of the lower esophageal sphincter and increase the frequency of reflux episodes. These dietary and behavioral changes are often accompanied by a reduction in physical activity and a more stressful pace of life, which can exacerbate functional esophageal symptoms. The aim of our study was to examine the sociodemographic and diagnostic profiles of esophageal pathology in Ouagadougou.

## 2. Materials and Methods

This was a descriptive and analytical cross-sectional study with retrospective data collection in the digestive endoscopy units of the Yalgado Ouédraogo University Hospital, Tengandogo University Hospital, and Sandof Polyclinic. It involved patients who underwent digestive endoscopy over a 5-year period, from January 1, 2020, to December 31, 2024. Data were collected from upper digestive endoscopy reports and histology results. Patients of all ages, both sexes, and all socio-professional categories who had an esophageal lesion on upper endoscopy with a report that could be analyzed were included. Information was collected using a survey form. The analysis of factors associated with esophageal pathologies was carried out in two stages. First, a bivariate analysis was conducted to assess the association

between each explanatory variable and the presence of an esophageal pathology. In a second step, a multivariate logistic regression was used to identify factors independently associated with esophageal disorders. The logistic model allowed for the estimation of adjusted odds ratios (aOR) and their 95% confidence intervals (95% CI). The dependent variable was the presence of an esophageal disorder. The independent variables included in the model notably included age and sex. Patient anonymity and data confidentiality were maintained. Authorization for data collection was obtained from the management of the aforementioned centers.

### 3. Results

#### 3.1. Sociodemographic Characteristics

A total of 4216 patients were included. The population was predominantly female (2138 women, 50.7%). The sex ratio was 0.97. The mean age of the patients was  $43.7 \pm 16.5$  years, ranging from 1 to 92 years. Young adults accounted for 60.9% of cases (**Table 1**).

**Table 1.** Sociodemographic characteristics of the patients.

Variables	n (%)
<b>Number of patients</b>	4216 (100%)
<b>Gender</b>	Mens: 2078 (49.3%) Womens: 2138 (50.7%)
<b>Average age</b>	$43.7 \pm 16.5$ years old
<b>Age range</b>	$\leq 16$ years: 131 (3.1%) [17 - 50 years[: 2567 (60.9%) $\geq 50$ years: 1518 (36%)
<b>Age groups and gender</b>	$\leq 16$ years Mens: 65 (1.5%) Womens: 66 (1.6%) [17 - 50 years[ Mens: 1267 (30.1%) Womens: 1300 (30.8%) $\geq 50$ years Mens: 746 (17.7%) Womens: 772 (18.3%)

#### 3.2. Diagnostic Aspects

##### 3.2.1. Clinical Aspects

The indications for upper gastrointestinal endoscopy were numerous and varied (**Table 2**). The main ones were epigastric pain (47.4%), regurgitation (14.4%), and heartburn (13.9%).

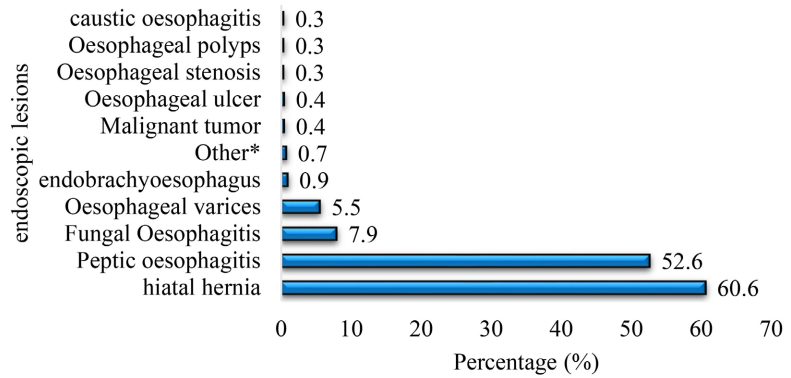
**Table 2.** Distribution according to the indication for upper gastrointestinal endoscopy.

Indications for upper GI endoscopy	Headcount	Percentage
Epigastralgia	<b>1998</b>	<b>47.4</b>
Regurgitation	<b>606</b>	<b>14.4</b>
Pyrosis	<b>585</b>	<b>13.9</b>
Dyspepsia	427	10.1
Retrosternal chest pain	391	9.3
Abdominal pain	254	6
Vomiting	220	5.2
Dysphagia	175	4.1
Haematemesis	126	3
Eructions	148	3.5
Search for signs of hypertension	112	2.7
Melena	77	1.8
Odynophagia	65	1.5
Halitosis	55	1.3
Precordialgia	45	1.1
Ingestion of caustic	37	0.9
Hypersialorrhoea	34	0.8
Palpitation	32	0.8
Altered general condition	30	0.7
Mucocutaneous pallor	30	0.7
Anorexia	27	0.6
Choking	21	0.5
Weight loss	14	0.3
Dyspnoea	11	0.3
Unexplained chronic cough	10	0.2
Ingestion of foreign body	8	0.2
Hepatomegaly	2	0.05
Splenomegaly	2	0.05
Other*	81	2.2

\*: canker sores, pre-therapeutic assessment, oropharyngeal candidiasis, dysphonia, occasional aspiration, epigastric mass, intra-abdominal mass, jaundice, rumination, post-polytomy monitoring, sensation of a lump in the esophagus, sensation of a foreign body in the esophagus, stricture syndrome, chronic laryngitis, asthenia, edema-ascitic syndrome.

### 3.2.2. Endoscopic Aspects

During endoscopy, hiatal hernias were mainly observed in 60.6% of cases and peptic esophagitis in 52.6% (**Figure 1**).



**Figure 1.** Distribution of patients according to endoscopic lesions found.

### • Histology

Squamous cell carcinoma (58%) and adenocarcinoma (42%) were the most common histological types of esophageal cancer.

#### • Distribution of esophageal pathologies by age group

Peptic esophagitis predominated in children and young adults, accounting for 71.7% and 58.2% of cases, respectively. In individuals over 50, hiatal hernia was more common (66.6%). The proportion of esophageal tumors increased with age. It was observed in 1.3% of the elderly and 0.2% of young adults, and was not found in children (**Table 3**).

**Table 3.** Distribution of major pathologies and esophageal cancer by age group.

Age range	Peptic oesophagitis (%)	Hiatal hernia n (%)	Oesophageal cancer n (%)
≤16 years	94 (71.8%)	54 (41.2%)	0 (0%)
[17 - 50 years[	1496 (58.2%)	1491 (58%)	6 (0.2%)
≥50 years	627 (41.3%)	1011 (66.6%)	20 (1.3%)

### Multivariate Analysis

There was a statistically significant association for all three pathologies with age and one with sex for peptic esophagitis and esophageal cancer. Men were 2.93 times more likely to develop cancer than women (**Table 4**).

**Table 4.** Multivariate analysis of sociodemographic factors associated with the main esophageal pathologies and esophageal cancer.

Esophageal pathology	Factor	Adjusted Odds Ratio	Confidence interval (95%)	p-value
Peptic oesophagitis	Gender (Women vs Mens)	1.18	1.04 - 1.34	<b>0.01</b>
	[17 - 50 years[ vs ≤16 years	0.72	0.5 - 0.94	<b>0.015</b>
	≥50 years vs ≤16 years	0.45	0.34 - 0.6	<b>&lt;0.001</b>
Hiatal hernia	Gender (Women vs Mens)	0.92	0.82 - 1.03	0.15
	[17 - 50 years[ vs ≤16 years	1.78	1.26 - 2.51	<b>0.001</b>
	≥50 years vs ≤16 years	2.51	1.77 - 3.56	<b>&lt;0.001</b>

**Continued**

Oesophageal cancer	Gender (Women vs Mens)	2.93	1.15 - 7.45	<b>0.027</b>
	[17 - 50 years[ vs ≤16 years	1	0.12 - 8	1
	≥50 years vs ≤16 years	12.3	1.5 - 102	<b>0.02</b>

**4. Discussion****4.1. Study Limitations**

This study, being retrospective in nature, is based on the analysis of hospital records, which may lead to missing data or selection biases. Furthermore, conducted in a university hospital, it reflects the hospitalized population rather than the general population, limiting the generalizability of the results. Despite these constraints, it provides useful insights into local trends and can guide future prospective studies.

**4.2. Sociodemographic Characteristics**

Esophageal pathology, excluding cancer, mainly affects young adults and women, as found in several studies [4] [5]. In our study, peptic esophagitis and hiatal hernia were the most common esophageal pathologies, while esophageal cancers were rare. These results are consistent with previous studies conducted in sub-Saharan Africa, which report a low incidence of esophageal cancer, particularly adenocarcinoma, compared to other regions of the world [6].

**4.3. Diagnostic Aspects**

Regarding peptic esophagitis, the risk decreased with age and it seemed more common in women (OR = 1.18; p = 0.01) and children. As for hiatal hernia, the risk increased significantly with age, reaching a peak in those aged 50 and over (OR = 2.51; p <0.001). These results are consistent with international epidemiological data showing that aging of the diaphragm muscles and loosening of muscle fibers increase the risk of hiatal hernia [7] [8]. Malignant tumors of the esophagus were rare in our series, but the risk increased sharply from age 50 (OR = 12.3; p = 0.020). They were more common in men (OR = 0.35; p = 0.046). These observations are consistent with global data showing that esophageal cancers mainly occur in older men [9]. Other African authors have emphasized the rarity of this cancer in our context [10]-[12]. Behavioral factors such as tobacco, alcohol, and the consumption of very hot foods, documented in Burkina Faso and other sub-Saharan countries, may contribute to these differences in distribution by sex and age [8].

**5. Conclusion**

In our study, peptic esophagitis and hiatal hernia are the most common esophageal pathologies, mainly affecting young adults and more often women. In contrast, esophageal cancer remains rare, but its incidence increases significantly

from the age of 50, which confirms the need for more targeted screening and management in this age group. This approach, focused on high-risk individuals, allows for early detection and optimal use of resources, particularly suitable for the African context. These results highlight the importance of early diagnosis of reflux and the prevention of esophageal complications in our context.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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