

Upper Gastrointestinal Tract Cancers in Individuals Under 50 in Ouagadougou : Sociodemographic and Diagnostic Aspects

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ABSTRACT

Introduction: Upper gastrointestinal tract cancers (UGTC) typically occur after the age of 50, but cases are increasingly reported in younger individuals, often diagnosed late. The aim of this study was to describe the sociodemographic and diagnostic characteristics of UGTC in patients under 50 years of age in Ouagadougou.

Materials and Methods: This was a cross-sectional study based on data from upper gastrointestinal endoscopies from three healthcare facilities in Ouagadougou. Patients under 50 years old with a histologically confirmed diagnosis of upper gastrointestinal tract cancer were included. The variables analyzed included sociodemographic characteristics, indications for endoscopy, endoscopic and histological features, tumor locations, and associated lesions.

Results: Out of 13,264 upper digestive endoscopies performed, 32 patients under 50 years old with confirmed hereditary diffuse gastric cancer (UGTC) were included. The average age was 40.1 ± 7.8 years, with a male predominance (62.5%; sex ratio = 1.7). The main indications for endoscopy were epigastric pain (34.3%) and dysphagia (21.9%). Gastric cancer was the most common location (56.2%), followed by esophageal cancer (28.1%). The predominant macroscopic appearance was ulcerative-proliferative. Histologically, adenocarcinoma predominated in gastric cancers, while squamous cell carcinoma was most common in esophageal cancers. All duodenal cancers were non-Hodgkin lymphomas.

Conclusion: UGTC in subjects under 50 years old is a reality in Ouagadougou and is often diagnosed late. Earlier use of upper gastrointestinal endoscopy in symptomatic young adults could improve diagnosis and prognosis.

Keywords

Upper gastrointestinal neoplasms, Gastric cancer, Esophageal cancer, Young adults, Burkina Faso.

Introduction

Cancers of the upper digestive tract, including cancers of the esophagus, stomach, and duodenum, represent a significant part of the global cancer burden and are a major cause of morbidity and

mortality related to non-communicable diseases [1,2].

Despite diagnostic and therapeutic advances observed in high-income countries, these cancers remain associated with a poor prognosis, due to often being diagnosed at an advanced stage of the disease [1,2]. In sub-Saharan Africa, the situation is particularly concerning. Late diagnosis, limited access to specialized healthcare facilities, low availability of upper gastrointestinal endoscopy, and insufficient screening programs contribute to high mortality related to upper digestive tract cancers [3,4]. Several African studies report that the majority of patients consult at an advanced stage, with local or metastatic complications limiting the possibilities for curative treatment [5,6].

Traditionally considered diseases of older adults, cancers of the upper digestive tract are increasingly being described in younger individuals, particularly in patients under 50 years of age [2,7]. This early occurrence is often associated with low diagnostic suspicion, both on the part of patients and healthcare professionals, which contributes to further delays in management [7]. Reported risk factors include smoking, alcohol consumption, dietary habits, certain chronic infections, as well as genetic predispositions [2,8]. In Burkina Faso, epidemiological data on digestive cancers remain limited and are mostly derived from hospital-based studies [5,9]. However, these suggest a non-negligible frequency of upper gastrointestinal tract cancers, with a significant proportion of late diagnoses, including among young individuals [5,9]. Nevertheless, the sociodemographic and diagnostic characteristics specific to upper gastrointestinal tract cancers in patients under 50 years old remain insufficiently documented, particularly in Ouagadougou. Describing these characteristics appears essential to improve the early recognition of these cancers, guide targeted screening strategies, and strengthen management in a resource-limited context. The objective of this study was to describe the sociodemographic and diagnostic aspects of upper gastrointestinal tract cancers in individuals under 50 years old in Ouagadougou (Burkina Faso).

Materials and Methods

This was a cross-sectional study with retrospective data collection, conducted in the digestive endoscopy units of the University Hospital Centers of Tengandogo, Yalgado Ouédraogo, and the SANDOF polyclinic in Ouagadougou (Burkina Faso).

The study was conducted over a period of 10 years, from January 1, 2015, to December 31, 2024.

The study population consisted of all patients under 50 years of age who were diagnosed with cancer of the upper digestive tract (esophagus, stomach, or duodenum) during the study period. Patients under 50 years of age at the time of diagnosis, who underwent upper digestive endoscopy with suspected upper digestive tract cancer confirmed histologically, were included in the study. Patients with incomplete or unusable records were excluded.

The data were collected from upper digestive endoscopy records

and anatomopathological reports. Collection was carried out using a pre-established standardized form. The variables collected were exclusively descriptive and included:

- Sociodemographic data : age, sex, occupation ;
- Endoscopic data : indications for endoscopy, tumor location (esophagus, stomach, duodenum), macroscopic appearance of the lesion; associated lesions;
- Histological data : histological type of cancer.

The data were entered and analyzed using the statistical software Epi Info 7.2.6.0, which allowed the calculation of means for quantitative variables and the calculation of proportions for qualitative variables. Data confidentiality and patient anonymity were respected. Authorization for data collection was obtained from each center.

Results

Sociodemographic Data

Thirty-two patients under 50 years of age were included in our study out of 13,264 endoscopies performed during this period. The population was predominantly male (n=20; 62.5% of cases). The sex ratio was 1.7. The mean age was 40.1 ± 7.8 years, with a range of 23 to 49 years. Farmers (31.3%) and housewives (15.6% of cases) were the most frequently reported occupations or activities (Table 1).

Table 1: Patient characteristics according to sociodemographic aspects.

Variables	n (%)
Total number of patients	32 (100%)
Sex	
Men	20 (62.5%)
Women	12 (37.5%)
Average age	40.1 \pm 7.8 years
Age groups	
	[15 - 25 years] : 2 (6.3%)
	[25 - 35 years] : 5 (15.6%)
	[35 - 45 years] : 15 (46.9%)
	[45 - 50 years] : 10 (31.3%)
Occupation	
Farmer :	10 (31.3%)
Housewife :	5 (15.6%)
Shopkeeper :	4 (12.5%)
Nurse:	3 (9.4%)
Teacher :	2 (6.3%)
Manager :	2 (6.3%)
Lawyer :	1 (3.1%)
Security officer :	1 (3.1%)
IT specialist :	1 (3.1%)
Mechanic :	1 (3.1%)
Student :	1 (3.1%)
Religious :	1 (3.1%)

Diagnostic Aspects

The main indications for endoscopy were epigastric pain (34.3% of cases) and dysphagia (21.9%) (Table 2).

Table 2: Indications for upper digestive endoscopy.

Indications	Staff	Percentage (%)
Epigastric pain	11	34.3
Other*	10	31.2
Dysphagia	7	21.9
Vomiting	6	18.7
Retrosternal pain	2	6.2
GERD syndrome	2	6.2
Chest pain	1	3.1
General health deterioration	1	3.1
Belching	1	3.1
Abdominal mass	1	3.1
Painful swallowing, heartburn	1	3.1
Search for signs of portal hypertension	1	3.1
Regurgitation	1	3.1

*: assessment of esophageal stenosis, biopsy on duodenal neoplasm, follow-up of an antral-bulbar tumor, gastric mass, hematemesis, hepatomegaly, esophageal mass, polypectomy of a bulbar polyp, gagging cough.

NB : A patient could have multiple indications.

Out of 59 cases of suspected upper digestive cancers, 32 were confirmed, representing a histo-endoscopic concordance of 54.2%. Gastric and esophageal locations were the most commonly found, with 20 cases (62.5%) and 9 cases (28.1%), respectively (Figure 1).

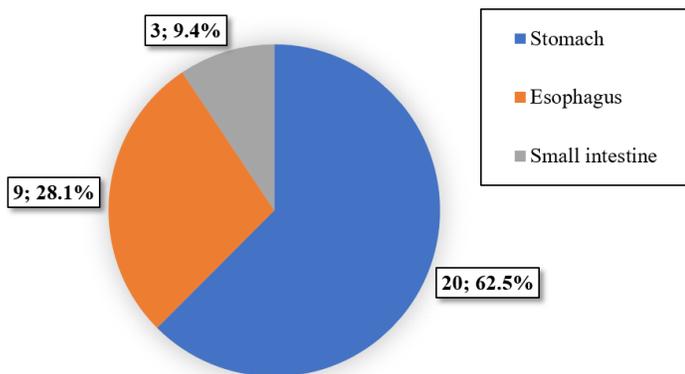


Figure 1: Locations of upper digestive tract cancers.

Regarding esophageal cancer (n=9), the tumor was mainly located in the middle third in 5 patients. Macroscopically, the tumors were mostly ulcerative-proliferative (3 cases), stenosing and ulcerative-proliferative (3 cases). Histologically, a squamous cell carcinoma was found in 5 patients (Table 3).

Table 3: Diagnostic features of esophageal cancers.

Variables	Staff
Location (n=9)	
Upper third	4
Middle third	5
Lower third	0
Macroscopic appearance (n=9)	
Ulcerative-proliferative	3

Ulcerative-proliferative and stenosing	3
Proliferative and stenosing	1
Proliferative	1
Infiltrating	1
Histological type (n=9)	
Squamous cell carcinoma	5
Adenocarcinoma	4
Associated lesions (n=2)	
Esophageal fistula	1
Gastropathy	1

Table 4: Diagnostic aspects of gastric cancers.

Variables	Staff
Location (n=20)	
Antrum	5
Pangastric	6
Gastric body	4
Fundus	2
Antrum and pylorus	2
Cardia and body	1
Macroscopic appearance (n=20)	
Ulcerated-proliferative	7
Proliferative	4
Ulcerated	3
Proliferative and infiltrative	1
Proliferative and stenosing	1
Ulcerated-proliferative and stenosing	1
Stenosing	1
Ulcerated-stenosing	1
Infiltrative	1
Histological type (n=20)	
Adenocarcinoma	10
Squamous cell carcinoma	7
Non-Hodgkin malignant lymphoma	3
Associated lesions (n=23)	
Esophageal yeast infection	8
Esophagitis	6
Gastropathies	6
Hiatal hernia	2
Polyp	1

For duodenal cancer, the bulbous, post-bulbar, and combined bulbous and post-bulbar locations were found in one case each. The tumor was ulcerative-proliferative in all patients. All duodenal cancers were non-Hodgkin lymphomas.

Discussion

Study limitations

The retrospective nature of this multicenter study, combined with the relatively small sample size, limits the statistical power and generalizability of the results. The incompleteness of certain data,

particularly concerning etiological risk factors (*Helicobacter pylori*, HIV, smoking, alcohol), tumor stage, therapeutic modalities, and follow-up, restricts causal and prognostic analysis. Moreover, the histo-endoscopic concordance observed could be influenced by technical constraints, particularly the number and quality of biopsies, in a context of limited resources.

Sociodemographic Profile of Patients

In our series, upper digestive cancers in young patients mainly affected men, with a sex ratio of 1.7 and an average age of 40.1 years. This male predominance is widely reported in the literature, both for gastric cancers and for esophageal cancers, including in young subjects, and could be related to greater exposure to environmental risk factors (tobacco, alcohol, smoked or salted foods) as well as to protective hormonal differences in women [1,2,10,11].

Farmers and housewives represented the most affected socio-professional categories, which could reflect a low socio-economic level exposing them to certain risk factors such as *Helicobacter pylori* (Hp) infection, food preservation through salting and smoking, and limited access to specialized care, as already described in African studies [12].

Diagnostic Aspects

Clinically, the main indications for endoscopy were epigastric pain and dysphagia. These symptoms, although non-specific, are alarm signs frequently reported in gastric and esophageal cancers, even in young patients, and should lead to early endoscopic investigation [13,14]. Dysphagia, in particular, is classically associated with esophageal cancers diagnosed at an already advanced stage [15].

The histo-endoscopic concordance observed in our study was 54.2%. This likely reflects diagnostic difficulties in our context, notably related to the accessibility to multiple biopsies and the quality of the samples. This concordance is comparable to that reported in other African hospital series [12].

The most frequent tumor locations were gastric (56.2%), followed by esophageal cancers (28.1%). This predominance of gastric cancer is consistent with African data, where it is one of the main upper digestive cancers. The cases involved gastric cancer preferentially affecting the antrum and the entire stomach, with a macroscopic appearance dominated by ulcerative-proliferative forms. Histologically, adenocarcinoma was the most frequent type, which aligns with data from the global literature [10,14]. Although gastric cancer is classically a disease of the elderly, several studies have shown that about 5 to 10% of cases occur before the age of 45, sometimes with more aggressive forms [14,16].

Associated lesions, notably esophageal mycoses, could be promoted by the immunosuppression caused by cancer. As for esophagitis and gastropathies frequently found in patients with gastric cancer, this may reflect a chronic inflammatory condition favoring carcinogenesis. Although Hp infection was not assessed in our study, it remains a major etiological factor for gastric

cancer and could play an important role in young subjects in our context [10,13]. Regarding esophageal cancer, the predominant location in the middle third and the high frequency of squamous cell carcinoma are characteristic of African series [12,15]. This histological distribution differs from that observed in Western countries, where distal adenocarcinoma is more common and often associated with gastroesophageal reflux and obesity [17]. However, the non-negligible proportion of adenocarcinoma observed in our series suggests a possible epidemiological transition. Duodenal cancers were rare in our study and were exclusively represented by non-Hodgkin lymphomas, which is consistent with data showing the rarity of duodenal adenocarcinomas and the predominance of lymphoid tumors at this age [18].

Conclusion

Cancers of the upper digestive tract in individuals under 50 years old, although rare, are not uncommon in Ouagadougou. They mainly affect men around their forties and are dominated by gastric and esophageal locations, most often diagnosed at an advanced stage. Clinical presentation with alarm symptoms and the predominance of aggressive histological forms reflect a persistent delay in diagnosis.

These findings call for increased clinical vigilance and early use of endoscopy in symptomatic young adults. They also highlight the need to develop targeted screening strategies and to conduct multicenter prospective studies in order to better understand the etiological factors and improve the management of these cancers in our resource-limited settings.

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