

Histo-Epidemiological Profile of Digestive Cancers in Togo

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Abstract: *Background:* The frequency of digestive cancers is increasing since the last ten years. The aim of the study was to determine the epidemiologic and histologic aspects of digestive cancers in Togo.

Method: We conducted a descriptive cross-sectional study focused on digestive cancers cases diagnosed from 1995 throughout 2014 (20 years) at the pathology laboratory of the Lomé teaching hospital. We included all digestive samples (biopsy, excision, surgical specimens) collected and sent to the pathology laboratory from 1994 to 2013 using data from the records of the laboratory.

Results: We have collected 1306 cases of digestive cancers (20.4%). The annual incidence was 65.3 cases. The sex-ratio (M/F) was 1.5. The mean age was 47.8 years. The most common locations were the stomach (35.3%) and the esophagus (27.3%). The adenocarcinoma was predominant in the stomach (84.4%), the rectum (70.2%), and the colon (86.3%). The squamous cell carcinoma was commonly found at the esophagus (94.8%). The lymphomas were observed in the small intestine (53.4%).

Conclusion: Digestive cancers are frequent in Togo and occur in young adults. The stomach cancer is the most common cancer.

Keywords: Digestive cancers, epidemiology, histology, Togo.

INTRODUCTION

The frequency of digestive cancers is increasing since the last years [1]. Due to consistent contact with carcinogenic food, the digestive tract is exposed to the cancer development [2]. Nowadays, the epidemiological and histological data of digestive cancers are available in the developed countries, where the colorectal cancers rank at second position after the lung cancers [2, 3]. The data on the digestive cancers are underdocumented, although they are an important cause of mortality in Africa, particularly in Togo [4]. The digestive cancers are not currently a major public health issue since the efforts are made for the infectious and nutritional disease preventions as well as the effective data collection tools for the cancer registry implementation [4].

The objective of this study was to report epidemiologic and histologic aspects of all digestive cancers in Togo.

1. MATERIALS AND METHODS

This was a retrospective and descriptive study conducted in the laboratory of pathology of Lomé University Teaching Hospital, the only pathology department in the country that receives all requests of histological examination. The study period was 20 years (January 1995 to December 2014). Databases reported in these records included the patient's identity (age, sex and address), clinical information, the personal and family history, origin, type of samples. Macroscopic descriptions and different histological types were also reported. The biopsies and surgical specimens were previously fixed in 10% formalin. Then they had undergone the usual techniques of paraffin embedding, microtome cutting, staining with hematoxylin-eosin. The cases included in our study were histological confirmed head and neck cancers. The study parameters consisted of frequency, age, sex, seat, and histological type. SPSS software was used for statistic analysis of data.

Ethical Consideration

This study received approval from the Head of the laboratory department to be conducted. Since it was

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counting records, patient consent was not required. However during the counting and data collection patient names were not collected in order to preserve confidentiality.

2. RESULTS

2.1. Epidemiology

We collected during our study period 1306 cases of digestive cancers representing (20.4%) of the total cancers (6400 cases of cancers). They thus occupy the 2em most common cancer after breast gynecological cancers (25.8%), and skin cancer before (12.4%). The annual incidence was 65.3 cases. They also occupied the 1èr most common cancer in men with 27.3% of

cases followed by prostate cancer (21.2%). In women, digestive cancers accounted for 16.1% of cases and are at 2èm rank after the Gynecologic breast cancers. The sex ratio (M/F) was 1.5. The overall mean age was 47.8 years (ranging between 19 and 102). The mean age in female patients was 56.3 years, while the mean age was 45.7 years in men (Figure 1). The Table 1 shows that stomach cancers (35.3%; n=462 cases) were predominant followed by esophageal cancers (27.3%; n=357cas).

2.2. Histology

The analyzed samples were 772 cases of biopsies (59.1%) and 534 cases of surgical specimen (40.9%).

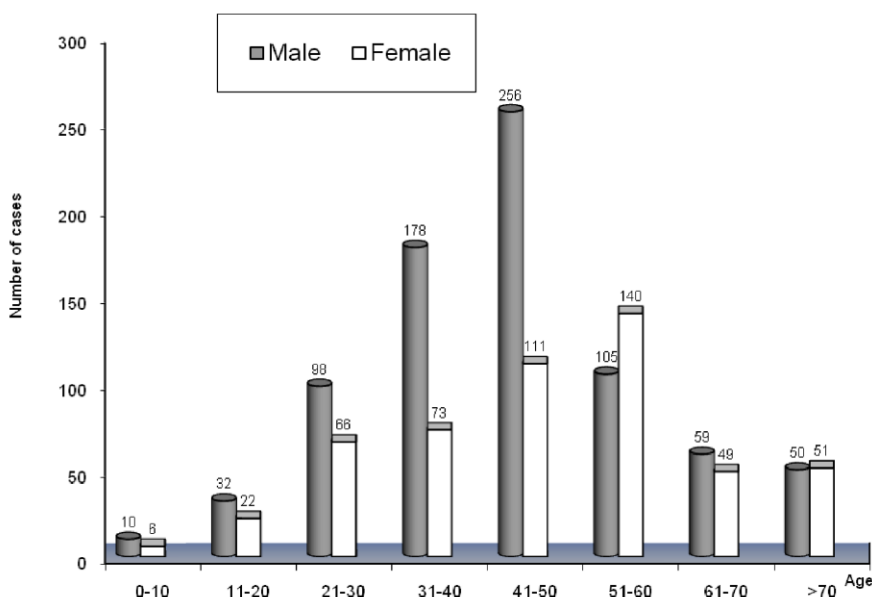


Figure 1: Distribution of digestive cancers related to the age and the sex.

Table 1: Distribution of Digestive Cancers on Location and Sex

| Location | Male (n=788) | Female (n=518) | Total (N= 1306) | Pourcentage (%) |
|-----------------|--------------|----------------|-----------------|-----------------|
| Stomach | 313 | 149 | 462 | 35,3 |
| Esophagus | 228 | 129 | 357 | 27,3 |
| Rectum | 57 | 67 | 124 | 9,5 |
| Rectosigmoid | 49 | 59 | 108 | 8,3 |
| Colon | 52 | 50 | 102 | 7,8 |
| Liver | 19 | 27 | 46 | 3,5 |
| Small Intestine | 18 | 10 | 28 | 2,1 |
| Pancreas | 9 | 11 | 20 | 1,4 |
| Anus | 10 | 8 | 18 | 1,4 |
| Gallbladder | 6 | 4 | 10 | 0,8 |
| Others | 27 | 4 | 31 | 2,6 |

Table 2: Distribution of Digestive Cancers According to Histological Types

| Histological groups and types | Number of Cases | Pourcentage |
|---|-----------------|-------------|
| Carcinomas (n= 1262) | | |
| Adenocarcinoma | 743 | 56,9 |
| Squamous cell carcinoma | 347 | 26,6 |
| Mucinous carcinomas | 75 | 5,7 |
| Hepatocarcinoma | 38 | 2,9 |
| Cholangiocarcinoma | 3 | 0,2 |
| Carcinoma NOS* | 56 | 4,3 |
| Hematopoietic tissue Cancers (n= 28) | | |
| Malt lymphoma | 21 | 1,6 |
| Hodgkin lymphoma | 7 | 0,5 |
| Sarcomas (n= 16) | | |
| Leiomyosarcoma | 14 | 1,1 |
| Fibrosarcoma | 2 | 0,2 |
| Total | 1306 | 100% |

Table 2 shows the distribution of digestive cancer according to histological types a predominance of carcinomas (96.6%; n = 1262). The stomach cancer was the first most common digestive cancers (35.3%) with 23.1 cases per year. The mean age of patients with stomach cancers was 52.6 years and the masculine predominance (67.7%; 313 cases) was observed. At histological level, carcinomas (92.9%; n=429 cases) were the most frequent followed by lymphomas (4.5%; n=21cases), and leiomyosarcomas (2.6%; n=12 cases). The carcinoma were composed of 390 cases of adenocarcinoma including 7 cases of signet-ring cell carcinoma, 24 cases of mucinous carcinoma, and 15 cases of unclassified carcinomas. The precancerous lesions have been specified in 8.7% of the cases comprising polyp, intestinal metaplasia, and *Helicobacter pylori* gastritis.

The esophageal cancer (27.3%) was the second most common digestive cancer which frequently occurred at a mean age of 46.8 years in men (252 cases, 70.6%). The predominant histologic types were squamous cell carcinoma (92.2%; n=329 cases) and adenocarcinomas (7.8 %; n=28 cases).

The rectal cancer (9.5%) was the third most common digestive cancer. The mean age was 51.9 years. A female predominance was reported in 74 cases (59.7%). The adenocarcinomas (n=87 cases, 70.2%) were the most frequent followed by mucinous carcinomas (n=27cases), undifferentiated carcinomas

(n=8 cases) and squamous cell metaplastic carcinomas (n=2 cases).

The recto sigmoid junction (8.3%) was the fourth common digestive cancer. The mean age was 47.8 years and the sex ratio was 1. At histologic level, the adenocarcinomas (n=92 cases, 85.2%) were the most frequent followed by mucinous carcinomas (n=12 cases, 11.1%) and non Hodgkin lymphoma (n=4 cases, 3.7%).

The colon cancer was the fifth most common digestive cancers (7.8%). The mean age of patients with colon cancer was 44.7 years and the masculine predominance (59 cases, 54.6%) was observed. The histologic types were adenocarcinomas (86.3%; n=88 cases), mucinous carcinomas (12 cases), and leiomyosarcomas (2 cases).

The liver cancer was the sixth most frequent digestive cancers (3.5%). The mean age of patients was 42.07 years and the female predominance (n=27 cases) was observed. The hepatocarcinoma (38 cases) was predominant followed by cholangiocarcinoma (3 cases), and non Hodgkin lymphoma (3 cases), and fibrosarcoma (2 cases).

The small intestine, the pancreas, the gallbladder cancers were rare and their histological types were adenocarcinomas. The squamous cell carcinoma was unique in anal cancers.

3. DISCUSSION

3.1. Epidemiology

In Our study, all digestive cancers that have been histologically confirmed originated from the country's hospitals; however, it still persists many unknown cases due to the absence of the cancer registry in Togo. The digestive cancers accounted for 20.4% of all total cancers and ranked second after gynecological cancers. The digestive cancers are increasing in our country since their frequency ranged from 17.8% in 1992 to 20.4% in our study [5]. The increasing number of digestive cancers could be due to the high rate of the hospital attendance, cutting-edge diagnostic methods, the effects of socio-economic factors, and dietary factors [6]. In Ivory Coast, the digestive cancers represent 13.7% and the stomach cancers are the most common with 44.5% [2]. The mean age (47.8 years) found in our study is comparable to that reported in the study completed in the Ivory Coast (48.7 years), although it is lower in developed countries (65-70 years). The masculine predominance (sex ratio=1.5) has been confirmed by several studies worldwide, particularly in Ivory Coast (1.4), in Morocco (1.5) and in France (1.6) [6-8].

3.2. Histology

Stomach Cancer

In our study, the stomach cancer (35.3%) was the first most common digestive cancer. The incidence of the stomach cancer has decreased in many of the developed countries as a result of the diet improvement, while the stomach cancer is increasing in developing countries [1, 9]. It increased from 6.4 % in 1993 to 12.7 % of total cancers in our study. The high number of the stomach cancer is probably related to the poverty since this cancer considerably occurs in low-income people who accumulate the risk factors [9]. In addition, the stomach cancer might be caused by the cancerous lesions such as *Helicobacter pylori* gastritis [10]. It is similar to the ratio found in France and Algeria [8, 11], indicating that the stomach cancer mostly occurs in men. The mean age of our patients was 53.9 years. This mean age is identical to those found in the Ivory Coast and in Algeria, while the mean age is lower than that observed in France, which is 70 years [6, 11, 12]. In our research, the adenocarcinoma (84.4%) was predominant in the stomach cancer. Similar adenocarcinoma data have been reported by Effi and al. (2011) in the Ivory Coast (87.2%), Benelkhaïat and al. (2010) in Morocco (88 %) [6, 7].

The Esophageal Cancer

With 23.5%, esophageal cancer followed the stomach cancer. Our data are different from those found by Waklisi *et al.* (2005) in Kenya [13]. The masculine predominance is confirmed by several scientists [1]. The increase rate of esophageal cancer in men may be resulted from dietary habits [2]. In fact, the alcohol consumption, smoking, and spicy food promote the occurrence of esophageal cancer through the esophageal mucosa irritation [2]. Because it is well-documented that men smoke and drink more than women, they are susceptible to develop esophageal cancers [1, 2]. The frequency of the esophageal cancer increases with the age. Therefore, this cancer is rare under 30 years. Our mean age, 46.8 years, is lower than that of Waklisis *et al.* (2005) result (58.7 years) [13]. The squamous cell carcinoma (94.8%) was prevalent. Effi and al. (2011), Peko and al. (2004) have reported 86.6% and 91% squamous cell carcinomas in the esophageal cancer respectively [6, 14].

Colorectal Cancer

Colorectal cancer was the third common cancer of digestive tract with 25.6%. Our results are comparable with those found by Effi and al. (2011) in Ivory Coast while different from European data where the colorectal cancer is the first digestive cancers [3, 6]. In France, the colorectal cancer accounts for 15% of the total cancers and 39% of digestive cancers [8]. The frequency of the stomach cancer is high in the sub-Saharan African regions, while the low incidence of the colorectal cancer is seen in these regions [1, 2]. Several studies have identified a masculine predominance [5, 6,11,14].

Liver Cancer

The frequency of the hepatocarcinomas is well known as well as their risk factors, including viral hepatitis B, aflatoxin, and cirrhosis in our regions [5,15]. The current frequency of this cancer could be greater than our findings since a few diagnosed liver cancers are operable [15].

Small Intestine Cancer

The rare proportions of the small intestine cancer in our study corroborate with the literature data [4]. The adenocarcinoma was prevalent followed by lymphoma. Our data are different from those of Jacob *et al.* (2013), who has observed a predominance of lymphomas followed by adenocarcinomas and carcinoid [16].

Pancreas Cancer

The pancreas cancer is frequent in Europe: with 2700 cases per year in France, the pancreas cancer is the fourth common digestive cancer [17]. This cancer incidence is underestimated because of the absence of methods for certitude in diagnosis [3].

Anal Cancer

The anal cancer appears to increase worldwide as a result of the expansion of sexually transmitted diseases such as human papilloma virus infection and HIV infection, which promote the development of the anal cancer [18]. The squamous cell carcinoma was the most histological type [1, 4, 6].

Gallbladder Cancer

The gallbladder cancer is rare in sub-Saharan Africa. The low incidence of the gallbladder cancer might be derived from the scarcity of vesicular lithiasis in Africa, while the vesicular billiard cancer seems to be more frequent in Europe [14, 19].

CONCLUSION

The digestive cancers are frequent in Togo and mostly occur in male young adults. The stomach and esophagus cancers are predominant. The squamous cell carcinoma and the adenocarcinoma are the most common histological types. It appears to implement a national registry cancer as well as efficient national strategies to screen and fight against the cancers, particularly the digestive cancers. The treatment and evolution aspects of digestive cancers will be investigated by further studies.

AUTHORS CONTRIBUTIONS

TD: was responsible for the design of the study, undertook the field study, performed data collection, analysis and interpretation, and wrote the manuscript. **MT, LS, KK, AA, AB, AAG and KA:** participated in the design of the study, supervised the data collection and participated in the data analysis. **NG** is responsible for the overall scientific management of the study, the analysis and interpretation, and preparation of the final manuscript. All authors have read and approved the final manuscript to be submitted for publication.

CONFLICTS OF INTEREST

The authors report no conflict of interest.

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Received on 04-05-2015

Accepted on 12-05-2015

Published on 13-08-2015

DOI: <http://dx.doi.org/10.6000/1929-2279.2015.04.03.1>