

## Pitfalls and Diagnostic Difficulties Related to Digestive Tract Cancers in North-Benin

HODONOU Montcho Adrien<sup>1\*</sup>, TAMOU SAMBO Bio Elie<sup>1</sup>, BOBOE Jordan<sup>2</sup>, SETO D. Morel<sup>3</sup>, TOBOME S. Romaric<sup>4</sup>, ALLODE S. Alexandre<sup>1</sup>

<sup>1</sup>Regional teaching hospital of Borgou Alibori (CHUD-B/A), Faculty of Medicine, University of Parakou, Parakou, Benin

<sup>2</sup>Resident of general surgery, National teaching hospital of Cotonou (CNHU-HKM), School of Health Sciences Cotonou, University of Abomey Calavi, Cotonou, Benin

<sup>3</sup>Régional Hospital of Allada, Allada, Benin

<sup>4</sup>Resident of general surgery, School of Health Sciences Lome, University of Lome, Lome, Togo

DOI: [10.36347/sasjs.2023.v09i01.004](https://doi.org/10.36347/sasjs.2023.v09i01.004)

| Received: 28.11.2022 | Accepted: 09.01.2023 | Published: 14.01.2023

\*Corresponding author: HODONOU Montcho Adrien

Regional teaching hospital of Borgou Alibori (CHUD-B/A), Faculty of Medicine, University of Parakou, Parakou, Benin

### Abstract

### Original Research Article

**Introduction:** Treatment of digestive cancers is not the only challenge for the practitioner over the world. Getting sound diagnosis still remains a big challenge given the pitfalls and difficulties occurring at this stage. The objective of the current study was to unravel pitfalls and difficulties related to the diagnosis of digestive cancer in northern Benin. **Methodology:** a cross-sectional study carried out from 2013 to 2017 at 4 hospitals in northern Benin was designed to discuss the efficiency of the current diagnosis tools and their limits for a good diagnosis. **Results:** In total, 141 cases of digestive malignancy were clinically suspected. The anatomo-pathological study was performed in 47.5% of cases (n=67) and did not confirm the disease in 25.4% of cases (n=17). Computed tomography was also applied in 3.5% of cases (n=5). The most frequent differences occurred in diagnosing gastric ulcers (5/17), adenoma and colonic polyps (4/17), erosive esophagitis (3/17), erosive gastritis (3/17), digestive tuberculosis (2/17). The non-availability of appropriate diagnosis tools, the assessment cost of clinical status, and the lack of financial means and advanced deterioration of patient's clinical condition remain the major factors limiting a sound diagnosis. **Conclusion:** Diagnostic difficulties are almost present when suspecting digestive tumor and may explain the reason why digestive cancers were underestimated in our context.

**Keywords:** Digestive cancer, pitfalls and difficulties, differential diagnosis, North Benin.

Copyright © 2023 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

## INTRODUCTION

Cancer also called malignant tumor or neoplasm is one of the major causes of death worldwide (10 million deaths in 2020) [1]. Death rate due to cancer in African and Asian countries was 58.3% and 7.2%, respectively. Such rate was higher compared to the overall cancer incidence in the same regions (49.3% and 5.7%, respectively) [1]. Digestive cancers account for 18.8% of the major body cancers [1]. In Africa, several studies showed a marked increase in digestive cancers over time [2-6]. In Niger, between 1992 and 2009 the number of recorded cancers has significantly increased from 186 cases in 1992 to 646 cases in 2009, including 594 digestive cancers [6]. In addition, several studies reported that surgical diagnosis related to curative surgery was low at the diagnosis time, 23% and 41.5%, according to Tobomè *et al.*, and Allodé *et al.*, [2, 3], respectively. Actually, treatment of digestive

cancers is not the only challenge for practitioners, but also getting a sound a diagnosis remains a major issue worldwide with many pitfalls and difficulties. The objective the current work was to unravel the pitfalls and difficulties when establishing diagnosis of digestive cancer at different hospitals in northern Benin.

## PATIENTS SAMPLING AND METHODS

The present work was a cross-sectional, retrospective and descriptive study covering a period of 5 years, from January 1<sup>st</sup> 2013 to December 31, 2017. The target population consisted of patients of both sexes admitted to the surgical departments of 4 hospitals in North Benin, namely Borgou Departmental University Hospital, Bembèrèkè confessionnal hospital, Papanè hospital Saint Martin, Tanguiéta confessionnal hospital. The selection criteria include clinical or intraoperative suspicion of malignant tumor in the digestive tract, and the availability medical data profile. An exhaustive

census of patients fulfilling these criteria was performed. The occurrence of digestive cancer was confirmed using anatomico-pathological examination of a biopsy or operated specimen.

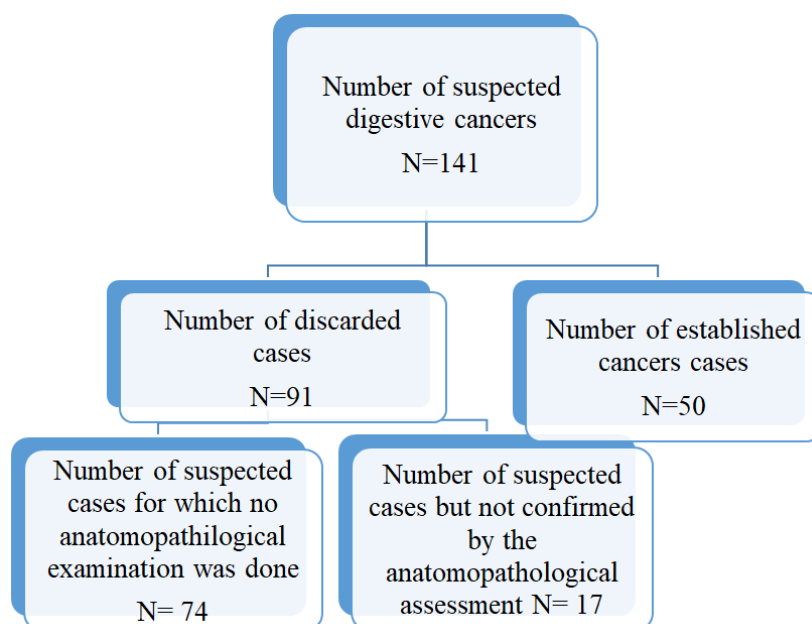
Data collected were related to socio-demographic characteristics of patients, clinical and paraclinical information and their classification as well. Data were processed using Epi Data Analysis software version 7.2.1.

Consent from competent authorities at various levels was obtained prior to data collection and patients' anonymity was guaranteed.

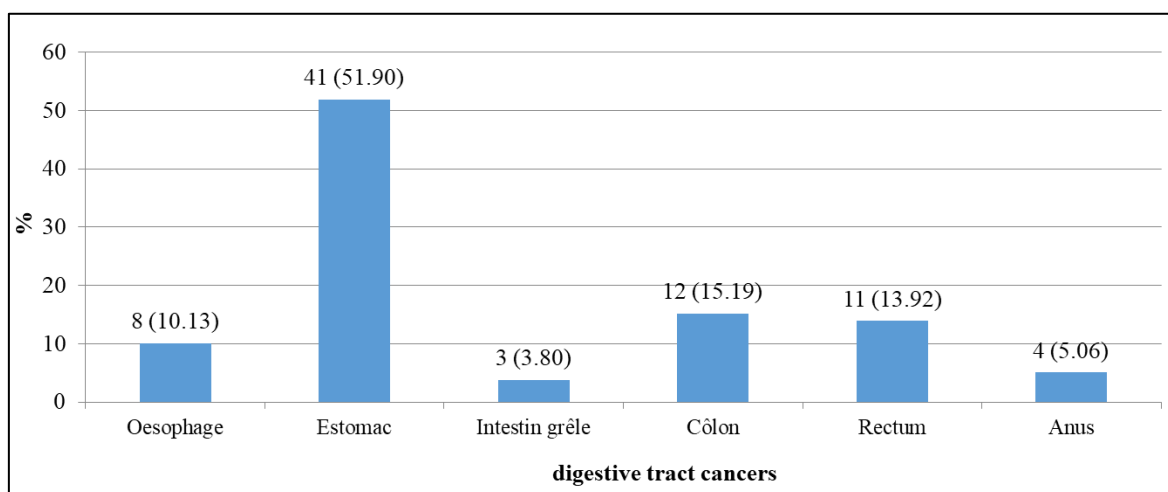
## RESULTS

### Frequency of Digestive Cancers

The total number of patients admitted to the surgical departments of the 4 hospitals was 29,481 during the period covered by the study. Of these, 141 patients were suspected for digestive cancer. The anatomopathological examination confirmed digestive cancer for 50 patients, i.e. 0.17% (Fig. n°1). A total of 79 lesions were recorded on different digestive organs considering these 50 patients (Fig. 2).



**Figure n°1: Flow diagram showing difficulties and pitfalls in diagnosing digestive cancers at four hospitals in Northern Benin**



**Figure n°2: Topographic distribution of digestive tract cancers for 50 patients**

(Esophage=esophagus; estomac=stomach; intestin grêle=small intestine; Côlon=colon; Rectum=rectum; Anus=anus)

### Diagnosis Difficulties

The completion rate of the anatomopathological examination was 47.5% (67/141). Of the 74 patients for whom the anatomopathological examination could not be carried out, the lack of financial means and clinical states were found to be the most limiting factor for 26 (35.1%) and 37 (50%) patients, respectively. Moreover, the lack of information and non-availability of the examination

accounted for 14.9% of the patients. Table 1 gives the presumption elements of digestive cancer for patients who were not examined using the anatomopathological method.

Likewise, the essential morphological examinations (digestive endoscopy and computed tomography) were carried out only for 67 patients out of 141, ie a completion rate of 45.5%. Thus, digestive endoscopy was performed in 59 patients, while computed tomography for only 5 patients.

**Table I: Suspecting elements of digestive cancer for patients who did not take the anatomopathological assessment**

	Number	Percentage (%)
<b>ŒSOPHAGUS</b>	10	13.5%
Dysphagia + AEG stage IV	3	
Paradoxical dysphagia + pneumonia + AEG stage IV	7	
<b>STOMACH</b>	34	45.9%
Epigastric mass on examination + AEG stage IV	11	
Abdominal mass with the vicinity invasion at the laparotomy	15	
Late postprandial vomiting relieving the patient + AEG stage IV	8	
<b>COLON</b>	28	37.9%
Mass in iliac fossa + AEG stage IV	9	
Inextricable colonic mass with invasion at laparotomy	19	
<b>ANUS</b>	2	2.7%
Palpable mass on anal touch	2	

### Diagnosis Pitfalls

The diagnosis of digestive cancer was not validated for 17 patients after the anatomopathological examination. Table 2 reports the macroscopic lesions

noted and the histological diagnoses retained. Two cases of digestive tuberculosis were detected in this patients' group.

**Table II: Diagnosis Pitfalls (differential diagnosis) as revealed by histological assessment**

Clinical or per-endoscopic aspect	Number	Histological appearance
<b>ŒSOPHAGUS</b>		
Erosive lesion	3	œsophagitis
<b>STOMACH</b>		
Budding ulcerative lesion	5	Gastric ulcer
Erosive lesion	3	gastritis
Ultero-hypertrophic lesion	1	Stomachal tuberculosis
<b>COLON</b>		
Budding ulcerative lesion	2	adenoma
Budding ulcerative and perforated lesion	1	Colonic tuberculosis
Budding lesion	2	polyp

## DISCUSSION

The frequency of digestive tract cancers at the four (04) target hospitals in northern Benin was 0.17%.; it may be underestimated in our study because 74 suspected cases did not benefit from anatomopathological examination. Indeed, digestive cancers account for 18.8% of the overall frequency of cancers worldwide [1]. This frequency varied according to the country, and also within study types. For instance, in Niger, digestive cancers represent 8.44% of all cancers types between 1992 and 2009 [6]. In Mali (Bamako), Diarra *et al.*, (2012) reported a rate of 7.4% of digestive cancers. This study was carried out at one hospital [4].

Stomach cancers were the most observed in the digestive tract (51.90%). Such observation was frequently reported in Africa in several studies [4, 5, 7]. In Benin, in 2012, Allodé *et al.*, found that stomach cancers accounted for 41.2% of all cancers' types [2]. The gastric location could be explained by the frequency of gastric ulcers and gastritis linked to common *Helicobacter pylori* infections and other risk factors specific to the dietary habits of black peoples in Africa [8, 9]. Stomach cancer in terms of incidence ranked the sixth worldwide according to Globocan 2020 [1]. Mahammat *et al.*, found colon cancer more frequent (25%) compared to stomach cancers.

Diagnosis difficulties were related to many factors (multifactorial). Firstly, delays in consultation were more frequent in low-income countries [11-13]. In this study, 37 patients out of the 74 who could not carry out the anatomopathological assessment were admitted when reached an inoperable clinical state. Bang GA *et al.*, diagnosed most of their patients at stage 3 and 4 (71.2%) and systematic screening was never organized, palliative surgery accounted for 35.5% of all cases [14]. Other factors identified were financial means, technical platform (material), non-availability of anatomopathological service, distance from patients' home and hospitals, lack of qualified human resources. Thus, patients may support the full treatment cost. In the four regions of northern Benin, only one pathological anatomy service with limited resources was available to perform digestive endoscopy and computed tomography services. Moreover, patients live far from the hospitals' location (several dozen kilometers). Also, qualified human resources were scarce. There is no oncologist in the northern region of Benin; only two pathologists work at one hospital in the Northern region of Benin. The WHO has already warned of capacity building in African countries in order to optimize cancers management. Likewise several studies highlighted the role of research and appropriate technical platform [15, 16].

The current demonstrates the importance of carrying out the histopathological examination not only to specify the tumor type and stage, but also to distinguish and discard non-malignant tumor. Cases of pseudotumor of tuberculosis origin in the digestive tract, which became scare, were then caught up and often successfully treated with chemotherapy. Several authors reported rarely these cases and their particularities [17-21].

## CONCLUSION

Late diagnosis, the lack of equipment, the lack of oncology specialists and the non-accessibility of paraclinical examinations are the major issues in cancers management, that heavily worsening the prognosis.

## REFERENCES

- Sung, H., Ferlay, J., Siegel, R. L., Laversanne, M., Soerjomataram, I., Jemal, A., & Bray, F. (2021). Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*, 71(3), 209-249.
- Allodé, A. S., Mensah, E., Tamou, E., Hodonou, A., Dossou, F., & Brun, L. (2012). Prise en charge des cancers du tube digestif dans deux hôpitaux du nord Bénin. *Annales de l'Université de Parakou, science de la santé*, 2(2), 14-17.
- Tobome, S. R., Hodonou, A. M., Kedalo, F. G., Bankole, C. H. E., Allode, S. A., & Haoudou, R. (2017). Panorama des tumeurs à l'hôpital de zone Saint Jean de Dieu de Tanguiéta au Bénin. *Annales de l'Université de Parakou, sciences de la santé*, 7(2), 9-11.
- Diarra, M., Konate, A., Traoré, CB, Souckho-Kaya, A., Diarra, CA, Doumbia-Samake, K., ... & Maiga, M. (2012). Epidemiology of digestive cancers in hospitals in Bamako. *Hegel*, 2(1), 12-22.
- Sawadogo, A., Ilboudo, P. D., Durand, G., Peghini, M., & Branquet, D. (2000). Epidémiologie des cancers du tube digestif au Burkina Faso: Apport de 8000 endoscopies effectuées au Centre Hospitalier national Sanou Souro (CHNSS) de Bobo Dioulasso. *Médecine d'Afrique Noire*, 47(7), 342-345.
- Salamatou, M. G., Hinde, H., Abdelmadjid, S., Ali, Q., Harouna, MZ, & Hassan, N. (2014). Digestive cancers in Niger. Relative frequency in a retrospective study from 1992 to 2009. *European Scientific Journal*, 10(9), 339-349.
- Koura, M., Some, R. O., Ouattara, D. Z., Napon-Zongo, P. D., Konsegré, V., SOMDA, S. K., ... & Sawadogo, A. (2019). Le cancer de l'estomac dans un pays d'Afrique sub-saharienne : aspects épidémiologiques, anatomocliniques et endoscopiques à Bobo-Dioulasso (Burkina Faso). *Science et technique, Science de la Santé*, 2019, 79-86.
- Youssof, O., Diarra, M., Samake, K., Togola, K., & Maiga, M. (2022). S M Camengo Police. Aspects épidémiologiques, cliniques et histologiques du cancer de l'estomac au CHU Gabriel Touré de Bamako (Mali). *European Scientific Journal*, 18(24), 123. <https://doi.org/10.19044/esj.2022.v18n24p123>.
- Adonis, N. M., Josue, B. M., Hyacinthe, M. C., Chasinga, T., Fortunat, C. C., Marlène, A. Z., Dieudonné, B. M., Jerry, K. K., Didier, M. L., & Marc, V. (2021). Profile of Endoscopic Lesions and Prevalence of H. pylori Infection at the Digestive Endoscopy Unit of Panzi General Reference Hospital in Bukavu. *Open Journal of Gastroenterology*, 11, 230-243. <https://doi.org/10.4236/ojgas.2021.1111024>
- Mahamat, Y. E. B., Bwelle, G., Chopkeng, C., Bombah, F., Tim, F. T., Bang, G. A., Savom, E. P., Mokake, D., Chichom, A., Essomba, A., Ngowe, M., & Sosso, M. A. (2022). The Epidemiological Profil of Digestive Cancers in Secondary and Tertiary Health Care Facilities in Cameroon. *Surgical Science*, 13, 98-104. <https://doi.org/10.4236/ss.2022.133013>
- Nga, W. T. B., Eloumou, S. A. F. B., Engbang, J. P. N., Bell, E. M. D., Mayeh, A. M. M., Atenguena, E., ... & Ndam, E. C. N. (2019). Prognostic factors of esophageal cancer in Cameroon: multicenter study. *The Pan African Medical Journal*, 33, 73. doi:10.11604/pamj.2019.33.73.16112

12. Ntagirabiri, R., Karayuba, R., Ndayisaba, G., Nduwimana, A., & Niyondiko, J. C. (2016). Esophageal Cancer: Epidemiological, Clinical and Histopathological Aspects over a 24-Years Period at Kamenge University Hospital, Bujumbura, Burundi. *Open Journal of Gastroenterology*, 6(4), 106-110.  
<http://dx.doi.org/10.4236/oigas.2016.64014>
13. Bang, G. A., a Goura, G., Chopkeng, J. C., Savom, E. P., Boukar, Y. M. E., Biwole, D. B., ... & Nonga, B. N. (2022). Emergency Digestive Oncological Surgery in Yaounde (Cameroon): Indications and Short-Term Results. *Surgical Science*, 13(4), 198-206.  
<https://doi.org/10.4236/ss.2022.134025>
14. Aristide, B. G., Djopseu, L. K., Chasim, C. B., Moto, G. B., Savom, E. P., Savom, E. P, ... & Sosso, M. A. (2021). Digestive cancers operated on in Cameroon: typology and staging at diagnosis. *Health Sciences and Disease*, 22(11), 11-15.
15. Organisation Mondiale de la Santé. Guide de la recherche sur le cancer en Afrique. Bureau régional de l’OMS pour l’Afrique, 2013, Brazzaville 188p
16. ALIAM contre le cancer. Les cancers en Afrique Francophone. *Ligue Nationale contre le Cancer*, Paris, France 2017 Paris 135p. [www.aliam.org](http://www.aliam.org) online 22/12/2022
17. Koura, M., Some, O. R., Ouattara, Z. D., Napon-Zongo, P. D., Konsegre, V., Somda, K. S., ... & Sawadogo, A. (2020). Le Cancer de l’Œsophage à Bobo-Dioulasso (Burkina Faso): Aspects Épidémiologiques, Cliniques, Endoscopiques et Anatomopathologiques. *Health Sciences and Disease*, 21(2), 21-25.
18. Seth, A. K., Nijhawan, V. S., Bhandari, M. K., Dhaka, R. S., & Kochar, S. K. (1998). Gastric tuberculosis (a case report). *MJAFI*, 54, 278-279.
19. Kpossou, A. R., Adjadohoun, S., Diallo, K., Badarou, S., Ngamo, G., Sokpon, C. N. D. M., ... & Biaou, O. (2021). Multifocal tuberculosis simulating multimetastatic colon cancer in an immunocompetent black African patient: a case report. *The Pan African Medical Journal*, 39, 167-167. Doi :10.11604/pamj.2021.39.167.26879
20. Hasnaoui, B., Hammami, A., Ksiasa, M., Jaziri, H., Elleuch, N., Brahem, A., ... & Jmaa, A. (2018). La tuberculose intestinale: aspects épidémiologiques, cliniques et endoscopiques. *La Revue de Médecine Interne*, 39, A175-A176.  
[Doi.org/10.1016/j.revmed.2018.10.144](https://doi.org/10.1016/j.revmed.2018.10.144)
21. El Alj, A. H., Halhal, M., Nouini, Y., Ameer, A., & Chkoff, R. L. (1997). Tuberculose gastro-duodénaux : aspects chirurgicaux. *Médecine du Maghreb*, 61, 25-8.