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Epidemiological, Therapeutic, and Prognostic Profile of Cancers Monitored at the Medical-Social Center of the Cotonou Garrison

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Abstract **Original Research Article**

Introduction: Cancer is one of the leading causes of death worldwide. It represents a real public health problem, especially in developing countries, due to late diagnosis. ***Objectives:*** The aim of this study was to describe the epidemiological characteristics, treatment modalities, and prognosis of patients followed for cancer at the medical-social center of the Cotonou garrison. ***Materials and methods:*** This was a retrospective and descriptive study covering a two-year period from January 1, 2023, to December 31, 2024, including 177 patients diagnosed and treated for cancer at the Cotonou Garrison Medical Center. ***Results:*** The average age was 50.3 years, with a predominance of women (59%) over men (41%). The most common cancers were breast cancer (31.6%), followed by prostate cancer (13.7%), cervical cancer (11.1%), colon cancer (9.7%), and liver cancer (9.4%). The cancer was detected at an advanced stage in 37.6% of cases. The most common histological type was adenocarcinoma (50.4%), followed by invasive ductal carcinoma (16.2%). Treatment modalities included chemotherapy in 85.4% of cases, while 10.3% were treated with surgery alone and 4.3% with radiotherapy alone. We report a hospital mortality rate of 6%. ***Conclusion:*** This study highlights the local specificities of the cancer profile treated at this center, emphasizing the importance of early diagnosis and better access to specialized treatments.

Keywords: Cancers, Epidemiology, Treatment, Prognosis.

INTRODUCTION

Cancer remains one of the leading causes of death worldwide. Nearly 20 million new cancer cases were diagnosed in 2022, and 9.7 millions cancer-related deaths were recorded, making cancer a major public health concern [1]. In addition to being a significant obstacle to increasing life expectancy, cancer is associated with considerable social and macroeconomic costs that vary according to cancer type, geographic region, and sex [2].

In sub-Saharan Africa, urgent action is required to curb a growing cancer incidence and mortality crisis. Without rapid intervention, estimates indicate a substantial increase in cancer-related deaths, from 520,348 in 2020 to nearly one million deaths per year by 2030 [3]. Fragile and under-resourced healthcare systems in sub-Saharan African countries have led to a rapidly increasing cancer burden, driven by multiple factors including incomplete or absent cancer registries, insufficient cancer prevention programs, limited availability and access to screening, diagnosis, and treatment, inadequate palliative care services, and a severe shortage of trained and experienced healthcare professionals [4].

In Benin, as in many countries in the region, epidemiological data remain limited and fragmented. Late diagnosis, combined with restricted access to specialized infrastructure and modern therapies, strongly influences patient prognosis, resulting in survival rates far lower than those observed in high-income countries. In this context, it appeared relevant to conduct this study in order to determine the epidemiological, therapeutic, and prognostic characteristics of cancers managed at the Medical-Social Center of the Cotonou Garrison. This facility, integrated into the military health system, represents a valuable observatory for analyzing local cancer patterns.

Materials and Methods

The study was conducted at the Medical-Social Center of the Cotonou Garrison, a public healthcare facility that plays a major role in providing medical services to both military personnel and civilians, thereby contributing to the improvement of population health and well-being.

This was a retrospective and descriptive study covering a two-year period from January 1, 2023, to December 31, 2024, involving 117 patients followed for cancer at the Medical-Social Center of the Cotonou Garrison. Patients with benign tumors, unknown histological type, incomplete treatment due to financial constraints, incomplete staging workup, or absence of complementary immunohistochemistry were not included. Patients with incomplete medical records or lost to follow-up were excluded.

The variables studied included sociodemographic data, clinical and paraclinical findings, diagnostic data, treatment modalities, and patient outcomes. The study was conducted with the approval of the local ethics committee and after authorization from the Chief Medical Officer of the Medical-Social Center of the Cotonou Garrison.

Results

The study included all cancer types regardless of anatomical site. The mean age was 50.3 years, with a predominance of patients under 50 years of age. Ages ranged from 22 to 81 years.

Table I: Distribution of patients by age group (n=117)

	Number	Percentage (%)
0 - 50	59	50,43
50 - 70	37	31,62
>70	21	17,94

A female predominance was observed, with a female-to-male ratio of 1.43.

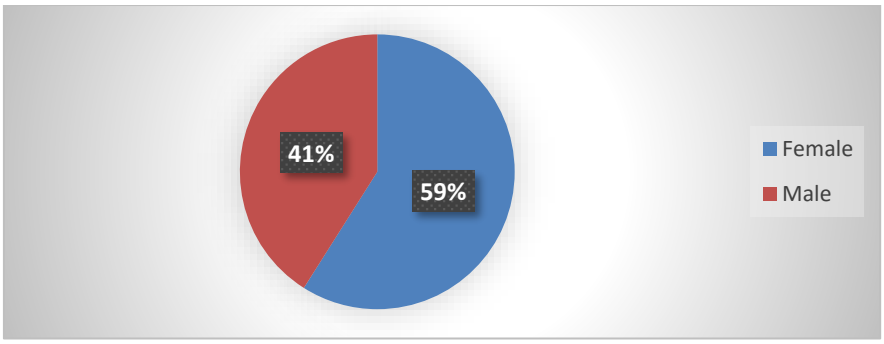

Figure 1: Distribution of cancer patients by sex (n=117)

Breast cancer was the most frequently diagnosed cancer, followed by prostate cancer and cervical cancer.

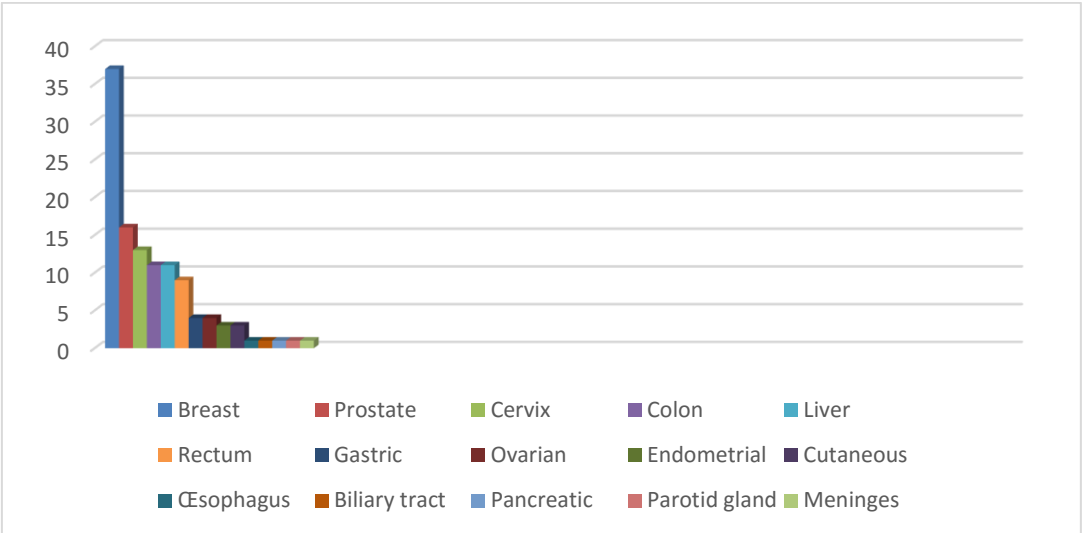

Figure 2: Distribution of cancers according to anatomical site (n=117)

Among women, breast cancer accounted for 52.17% of cases, followed by cervical cancer (18.34%) and endometrial cancer (0.04%). Among men, prostate cancer represented 33.33% of cases, followed by colon cancer (20.33%), liver cancer (16.66%), and rectal cancer (12.5%), with a statistically significant association ($p < 0.01$). Adenocarcinoma was the most common histological type (50.4%)

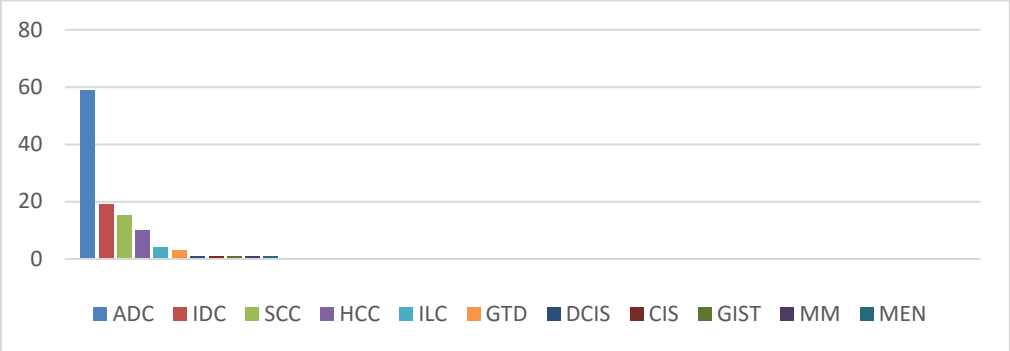

Figure 3: Distribution of patients according to histological type (n=117)

Adenocarcinoma was the most common histological type (50.4%), followed by invasive ductal carcinoma (16.2%), squamous cell carcinoma (12.8%), hepatocellular carcinoma (8.5%), invasive lobular carcinoma (3.4%), gestational trophoblastic disease (2.6%), intraductal carcinoma (0.9%), carcinoma in situ (0.9%), gastrointestinal stromal tumor (0.9%), melanoma (0.9%), meningioma (0.9%), Kaposi sarcoma (0.9%), and micropapillary carcinoma (0.9%).

In the majority of our patients, the diagnosis was established at an advanced stage of disease: 37.6% of patients were diagnosed at stage IV, 35.9% at stage III, 23.9% at stage II, and 2.6% at stage I.

Table II: Distribution of cancer patients by disease stage (n=117)

	Number	Percentage
Stage I	03	2,6
Stage II	28	23,9
Stage III	42	35,9
Stage IV	44	37,6

Therapeutic strategies varied according to cancer type, disease stage, and decisions made during multidisciplinary team meetings.

Among patients receiving chemotherapy, 30.8% were treated with chemotherapy alone, 18% with chemotherapy plus surgery, 14.5% with chemotherapy plus surgery plus radiotherapy plus hormonotherapy, 9.4% with chemotherapy plus surgery plus radiotherapy, 6.83% with chemotherapy plus hormonotherapy, 5.13% with chemotherapy plus radiotherapy, and 0.85% with chemotherapy plus radiotherapy plus hormonotherapy.

Tableau III: Distribution of cancer patients by treatment modalities (n=117)

	Number	Percentage
CMT	36	30,8
CMT + SURG	21	18
CMT+SURG+RT+HT	17	14,5
RT	12	10,25
CMT+SURG+RT	11	9,40
CMT+HT	08	6,83
CMT+RT	06	5,13
SURG	05	4,27
CMT+RT+HT	01	0,85

The in-hospital mortality rate was 6%.

Deaths were predominantly associated with hepatocellular carcinoma (71.42%), followed by colorectal cancer (0.14%) and biliary tract carcinoma (0.14%), with a statistically significant association ($p < 0.01$).

DISCUSSION

Sub-Saharan Africa is facing an impending health crisis. Historically characterized by high morbidity and mortality due mainly to infectious diseases, malnutrition, and poor maternal and child health, the region is now experiencing a significant rise

in non-communicable diseases, including cancer [4]. The mean age at diagnosis of 50.3 years observed in this study is consistent with findings reported by Darré T *et al.,* in Togo (2017) and Ahoua BE *et al.,* in Côte d'Ivoire (2013), who reported mean ages of 50.4 and 51.26 years, respectively [5,6]. This trend is particularly concerning as it increasingly affects younger populations, possibly due to the demographic structure of developing countries, genetic factors, and early exposure to environmental and behavioral risk factors. The female predominance observed in this study may be related to the high frequency of breast cancer, which was the most common tumor site in our series. This finding may reflect gender-specific health vulnerabilities in our setting, including limited access to preventive care and screening programs targeting women's health. In contrast to our results, Ahoua BE *et al.,* reported a predominance of cervical cancer (33.25%), followed by breast cancer (12.44%), in Côte d'Ivoire in 2013 [6]. According to GLOBOCAN 2022 data, breast cancer is the most frequently diagnosed cancer in Benin, followed by prostate, cervical, liver, and colorectal cancers. Similar to our findings, several authors have reported that patients in sub-Saharan Africa often present with advanced-stage disease [7,8]. This pattern reflects delayed healthcare-seeking behavior, with many patients consulting at a late stage of disease. In our setting, initial reliance on home-based care or traditional healers, combined with financial barriers to accessing medical services, may contribute significantly to delayed presentation. Consequently, urgent and coordinated actions are required, including the implementation of effective cancer control strategies, integration of cancer care into universal health coverage schemes, strengthening of early detection and screening programs, incorporation of palliative care into health systems, expansion and training of specialized oncology personnel, and promotion of cancer research. The prognosis of cancers managed at our center is strongly influenced by the advanced stage at diagnosis. More than half of the patients were treated at stage III or IV, which substantially limits long-term survival outcomes. From a therapeutic perspective, patient management remains constrained by limited access to specialized oncologic treatments. Surgery and chemotherapy are the most frequently utilized treatment modalities, whereas radiotherapy is currently unavailable in Benin and requires medical evacuation abroad. This limitation partly accounts for the unfavorable prognosis observed, with overall survival rates lower than those reported in high-income countries. Although palliative care services are available, they remain insufficiently developed, thereby exacerbating suffering among patients with advanced or terminal disease.

This study has several strengths, notably the presentation of previously unpublished data from a military medical-social center, a setting that is rarely documented in the literature. It provides an original perspective on cancer management within a specific institutional context, thereby contributing to the enrichment of local and regional knowledge. However, several limitations should be acknowledged, including the single-center design, the relatively small sample size, and the lack of certain follow-up data, which may limit the generalizability of the findings. From a future perspective, it is essential to strengthen early screening programs, improve access to specialized treatments (particularly radiotherapy) and further develop palliative care services.

CONCLUSION

This study conducted at the Medical-Social Center of the Cotonou Garrison provides original data on the epidemiological, therapeutic, and prognostic profile of cancers managed at this facility. The findings highlight a predominance of breast, cervical, and prostate cancers, as well as frequent diagnosis at advanced stages, which significantly limits long-term survival outcomes. Cancer management in this setting relies primarily on surgery and chemotherapy.

Conflict of Interest: The authors declare no conflicts of interest

Authors' Contribution: All authors contributed to this work.

REFERENCES

1. EE-TCEM : Cancers colo-rectaux N° Validation : 0309202515. https://share.google/ufCq3jFePDlhkzfRM. 2025
2. Ferlay J, Ervik M, Lam F, *et al.,* Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. [En ligne]. 2022. Disponible sur : https://gco.iarc.who.int/today, accessed [27 novembre 25].
3. Bray F, Laversanne M, Sung H, *et al.,* Statistiques mondiales sur le cancer 2022 : estimations GLOBOCAN de l'incidence et de la mortalité dans le monde pour 36 cancers dans 185 pays. CA Cancer J Clin 2024 May-Jun;74(3):229-263. doi: 10.3322/caac.21834. Epub 2024 Apr 4
4. Godet J, Gombé MC, Gueye S, Belembaogo E, Harif M, Courtay de Gaulle *et al.,* Les cancers en Afrique francophone.1er ed. Paris: La Ligue Nationale Contre le Cancer; 2017.
5. Kpossou AR, Vignon RK, Hadjete J, *et al.,* Cancers colorectaux dans deux établissements hospitaliers à Cotonou de 2013 à 2023 : aspets épidémiologiques, diagnostiques, thérapeutiqurs et pronostiques. Mali Médical 2025, tome XL N°3
6. Darre T, Amégbor K, Bagny A, *et al.,* Profil histo-épidémiologique des cancers colorectaux au Togo. Journal Africain d'Hépatologie et de Gastroentérologie. 2014 ; 8(4):226-9
7. Belhamidi MS, Sinaa M, Kaoukabi A, *et al.,* Profil épidémiologique et anatomopathologique du cancer

colorectal : à propos de 36 cas Pan African Medical Journal. 2018 ; 30:159 doi:10.11604/pamj.2018.30.159.15061

8. Mosa F, Andrianarijon HN, Rakotomena SD, Rajaonarivony T, Rakoto Ratsimba HN. Cancers Colorectaux Chez Les Sujets Jeunes Vues Au Centre Hospitalier Universitaire Joseph Ravoahangy Andrianavalona, International Journal of Progressive Sciences and Technologies (IJPSAT) Vol. 50 No. 1 April 2025
9. Tohmé C, Labaki M, Hajj G, Abboud B, Noun R, Sarkis R. Le cancer colorectal du sujet jeune : Présentation, caractéristiques clinicopathologiques et pronostic. J Med Liban 2008 ;56(4):208-14.
10. El Housse, Ajbara W, Amsaguine S, El Amrani N, Drissi H, Ahallat M, Radallah D. Profils épidémiologique et anatomoclinique d'une population marocaine atteinte de cancer colorectal.African Journal of Cancer, 2015)7(2), 95-99.
11. Liboko AFB, Mbola LTM, Zerbo N, Ndingossoka RJ, Ngatali CFS, Ndounga E *et al.,* Aspects épidémiologiques, diagnostiques et thérapeutiques des cancers colorectaux au CHU de Brazzaville. Health Sciences and Diseases.2022;23(4):52-6.
12. Youssouf O, Odjo J, George S, Siolo BE, Koffi B. Aspects Épidémiologiques et Cliniques des Cancers Colorectaux à Bangui. European Scientific Journal ESJ. 2023 ;1:38
13. Soumaya Merouche, S.M (2025) Le cancer colorectal chez les jeunes : Caractéristiques et enjeux. Algerian Journal of Medical and Health Research, volume 4, (2): 35-48.
14. Exarchakou A, Donaldson LJ, Girardi F, Coleman MP. Colorectal cancer incidence among young adults in England: Trends by anatomical sub-site and deprivation. PLoS One. 2019 Dec 5;14(12):e0225547. doi: 10.1371/journal.pone.0225547. PMID : 31805076 ; PMCID : PMC6894790.