Clinical Study

Cancers in Togo from 1984 to 2008: Epidemiological and Pathological Aspects of 5251 Cases

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Objective. To describe the epidemiological and histological aspects of cancers in Togo. **Materials and Methods.** We made a retrospective review of the epidemiological and pathological features of cancers observed from 1984 to 2008 at the laboratory of pathology of CHU-TOKOIN in Lomé, Togo. **Results.** During our study period, we found 5251 cases of cancers with an annual average frequency of 210 cases. The sex ratio, male/female, was 0.9 and the average age of occurring was 45.3 years. This average age was 46.9 years for men and 43.8 years for women. The most frequent cancers for men were prostate cancer (12.9%), nonmelanoma skin cancer (10.4%), and gastric cancer (10.3%). For women it was breast cancer (27.1%), cervix cancer (11.2%) and non-Hodgkin lymphoma (6.3%). Histologically, it was carcinomas in 68.1% of the cases, sarcomas in 11% of the cases and non-Hodgkin lymphomas in 12.6% of the cases. Children cancers were primarily Burkitt lymphoma (27.9% of cases) and retinoblastoma (8.5% of cases). **Conclusion.** This study shows that cancers are frequent in Togo and emphasizes on the necessity of having a cancer register for the prevention and the control of this disease in Togo.

1. Introduction

The global burden of cancer weighs more each day. Currently, there are more than 22 million cases in the world with more than half in developing countries [1, 2]. Togo, following the example of most countries in the WHO African region, has no data on the extent and global characteristics of cancer [3].

The aim of our study was to describe the epidemiological and histopathological aspects of cancers diagnosed in the laboratory of pathology of CHU-TOKOIN in Lomé, in order to promote the establishment of a cancer register in Togo. Togo is indeed a small country in the West African coast of 56600 km² with 6,145,000 inhabitants. It has a population growth rate of 2.7% and life expectancy at birth is 54 years. The population is very young (60% under 20 years and only 3.1% over 64 years) and the seroprevalence rate of HIV

passed from 6% in 2000 to 4.5% in 2004 [4]. The economy of the country relies on agriculture, breeding, and export of phosphate.

2. Materials and Methods

This was a retrospective and descriptive study carried on all cancer cases diagnosed from January 1984 to December 2008 (25 years) in the only laboratory of pathology of Togo, located inside CHU-TOKOIN in Lomé (Togo). These cases were compiled from records of that laboratory. The study material consisted of biopsies and surgical specimens fixed in formalin at 10% and came from various medical structures in Togo. These samples were processed by conventional histological techniques. Studied variables were frequency, sex, age, cancer site, and its histological nature. For the

TABLE 1: Distribution of cancers by site and sex.

ICD-10	Site	Male		Female		Both sexes	
		Nb** of cases	%	Nb** of cases	%	Nb** of cases	%
C0-C06	Mouth	80	3.1	39	1.5	119	2.3
C07-C08	Salivary gland	77	3.0	39	1.5	116	2.2
C9-C14	Pharynx	52	2	22	0.8	74	1.3
C15	Oesophagus	129	5.0	49	1.8	178	3.4
C16	Stomach	264	10.3	115	4.3	379	7.2
C17	Small intestine	19	0.7	14	0.5	33	0.6
C18-C21	Colon, rectum, anus	115	4.5	61	2.2	176	3.4
C22	Liver	74	2.9	42	1.6	116	2.2
C23-C24	Gallbladder, and so forth.	3	0.1	5	0.2	8	0.2
C25	Pancreas	16	0.6	5	0.2	21	0.4
C30-C31	Nose, sinuses, and so forth.	31	1.2	10	0.4	41	0.8
C32	Larynx	95	3.7	12	0.4	107	2.0
C33-C34	Trachea, bronchus and lung	40	1.6	12	0.4	52	1.0
C38	Pleura	23	0.9	31	1.2	54	1.0
C40-C41	Bone	160	6.2	99	3.7	259	4.9
C43	Melanoma of the skin	48	1.9	25	0.9	73	1.4
C44	Other skin cancers	268	10.4	134	5.0	402	7.6
C45	Mesothelioma	2	0.0	5	0.2	7	0.2
C46	Kaposi's sarcoma	92	3.6	133	5.0	225	4.3
C49	Other soft tissue	13	0.5	14	0.5	27	0.5
C50	Breast	25	1.1	729	27.1	754	14.4
C51	Vulva	—	—	20	0.7	20	0.4
C52	Vagina	—	—	27	1.0	27	0.5
C53	Cervix	—	—	302	11.2	302	5.8
C54	Uterus	—	—	112	4.2	112	2.1
C56	Ovary	—	—	132	4.9	132	2.5
C57	Fallopian tube	—	—	3	0.1	3	0.1
C58	Placenta	—	—	43	1.6	43	0.8
C60	Penis	13	0.5	—	—	13	0.2
C61	Prostate	332	12.9	—	—	332	6.3
C62	Testis	21	0.8	—	—	21	0.4
C64	Kidney	29	1.1	22	0.8	51	1.1
C65	Renal pelvis	4	0.2	1	0.0	5	0.1
C67	Bladder	43	1.7	21	0.8	64	1.2
C68	Ureter	1	0.0	0	0.0	1	0.0
C69	Eye	70	2.7	62	2.3	132	2.5
C70-C72	Brain, nervous system	2	0.1	4	0.1	6	0.1
C73	Thyroid	23	0.9	62	2.3	85	1.6
C76	Other and unspecified	13	0.5	9	0.3	22	0.4
C77-C80	Metastasis	55	2.1	41	1.5	96	1.9
C81	Hodgkin disease	62	2.4	30	1.1	92	1.8
C82-C85	Non-Hodgkin Lymphoma	237	9.2	170	6.3	407	7.8
C90	Myeloma	5	0.2	1	0.0	6	0.1
C91-C95	Leukaemia	29	1.1	29	1.1	58	1.1
	All sites	2565	100	2686	100	5251	100

Nb**: Number.

TABLE 2: Distribution of cancers by site and age in men.

ICD-10	Site	Unk	0–14	15–24	25–34	35–44	45–54	55–64	65+	All	%
C0–C06	Mouth	1	1	3	7	12	20	22	14	80	3.1
C07–C08	Salivary gland	1	6	10	12	12	9	16	11	77	3.0
C9–C14	Pharynx	1	3	4	3	6	12	7	16	52	5.2
C16	Stomach	8	1	9	16	48	64	44	74	264	10.3
C17	Small intestine	0	1	5	2	3	0	4	4	19	0.7
C18–C21	Colon, rectum, anus	0	3	5	12	25	31	20	19	176	4.5
C22	Liver	1	4	5	20	11	17	9	7	74	2.9
C23–C24	Gallbladder, and so forth.	0	0	0	0	2	1	0	0	3	0.1
C25	Pancreas	0	0	1	2	2	2	6	3	16	0.6
C30–C31	Nose, sinuses, and so forth.	1	1	5	2	3	6	5	8	31	1.2
C32	Larynx	1	0	0	4	16	38	25	11	95	3.7
C33–C34	Trachea, bronchus and lung	0	0	3	4	7	13	5	8	40	1.6
C38	Pleura	0	0	2	2	1	6	6	6	23	0.9
C40–C41	Bone	2	51	21	17	15	25	10	19	160	6.2
C43	Melanoma of the skin	0	0	0	7	11	8	8	14	48	1.9
C44	Other skin cancers	5	4	4	66	50	48	30	31	268	10.4
C45	Mesothelioma	0	0	0	1	0	0	1	0	2	0.0
C46	Kaposi's sarcoma	3	10	3	16	21	13	9	17	92	3.6
C49	Other soft tissue	1	5	3	0	0	0	4	0	13	0.5
C50	Breast	0	0	0	2	4	5	2	12	25	1.1
C60	Penis	0	0	0	0	1	1	8	3	13	0.5
C61	Prostate	3	0	0	0	2	26	73	228	332	12.9
C62	Testis	0	6	3	2	1	3	2	4	21	0.8
C64	Kidney	0	11	5	2	0	3	5	3	29	1.1
C65	Renal pelvis	0	0	0	0	0	2	2	0	4	0.2
C67	Bladder	0	1	0	1	15	5	10	11	43	1.7
C68	Ureter	1	0	0	0	0	0	0	0	1	0.0
C69	Eye	1	24	9	7	11	7	7	4	70	2.7
C70–C72	Brain, nervous system	0	0	0	1	0	1	0	0	2	0.1
C73	Thyroid	0	0	1	4	7	4	4	3	23	0.9
C76	Other and unspecified	0	0	1	2	3	3	2	2	13	0.5
C77–C80	Metastasis	3	0	4	6	8	20	7	7	55	2.1
C81	Hodgkin disease	0	23	17	9	7	3	2	1	62	2.4
C82–C85	Non-Hodgkin Lymphoma	4	61	38	29	31	38	18	18	237	9.2
C90	Myeloma	0	0	0	1	0	2	2	0	5	0.2
C91–C95	Leukaemia	1	2	3	5	5	4	5	4	29	1.1
	All sites	39	219	195	268	353	482	413	596	2565	100

distribution of different anatomical sites of cancers we used the international classification of diseases adopted by WHO in 2002 (ICD-10). Statistical processing and data analysis were performed by using SPSS software.

3. Results

3.1. Epidemiological Aspects. We have collected during our study period 5251 cases of cancer histologically confirmed, with a yearly average of 210 cases. We observed a decrease

of cancer incidence in the last ten years (from 1999 to 2008) with 163 cases yearly. Men were affected in 2565 cases and women in 2686 cases, representing, respectively, 48.8% and 51.2% of cases with a ratio of 0.9.

The average age of patients was 45.3 years with extremes of 10 days and 98 years. This average was 43.8 years for women and 46.9 years for men. Figure 1 shows the distribution of cancers according to sex and age. The most affected age bracket was 45–54 years for women (21%) and over 64 years for men (23.2%).

TABLE 3: Distribution of cancers by site and age in women.

ICD-10	Site	Unk	0–14	15–24	25–34	35–44	45–54	55–64	65+	All	%
C0–C06	Mouth	0	3	3	7	10	9	3	4	39	1.5
C07–C08	Salivary gland	1	2	6	9	7	5	2	8	39	1.5
C9–C14	Pharynx	0	1	2	6	2	3	3	4	22	0.8
C15	Oesophagus	0	0	2	6	7	8	16	10	49	1.8
C16	Stomach	0	0	5	4	14	30	23	39	115	4.3
C17	Small intestine	0	3	1	4	2	3	0	1	14	0.5
C18–C21	Colon, rectum, anus	0	1	6	8	11	12	9	14	61	2.2
C22	Liver	0	4	4	7	8	7	3	9	42	1.6
C23–C24	Gallbladder, and so forth.	0	0	0	0	1	1	1	2	5	0.2
C25	Pancreas	0	0	0	1	0	2	0	2	5	0.2
C30–C31	Nose, sinuses, and so forth.	0	1	2	0	3	1	3	0	10	0.4
C32	Larynx	0	1	0	0	3	1	1	6	12	0.4
C33–C34	Trachea, bronchus and lung	1	1	0	0	2	4	1	3	12	0.4
C38	Pleura	1	0	1	2	4	4	6	13	31	1.2
C40–C41	Bone	1	21	17	13	8	8	10	21	99	3.7
C43	Melanoma of the skin	0	0	0	3	5	6	8	3	25	0.9
C44	Other skin cancers	1	0	6	25	17	20	27	38	134	5.0
C45	Mesothelioma	1	2	0	0	2	0	0	0	5	0.2
C46	Kaposi's sarcoma	4	10	30	34	15	19	8	13	133	5.0
C49	Other soft tissue	0	3	2	0	2	3	0	4	14	0.5
C50	Breast	5	0	17	127	215	196	99	70	729	27.1
C51	Vulva	0	3	1	3	2	2	5	4	20	0.7
C52	Vagina	0	4	2	6	2	3	6	4	27	1.0
C53	Cervix	1	0	5	32	77	90	56	41	302	11.2
C54	Uterus	2	1	4	5	15	31	28	26	112	4.2
C56	Ovary	1	17	21	16	19	29	16	13	132	4.9
C57	Fallopian tube	1	0	0	0	2	0	0	0	3	0.1
C58	Placenta	0	0	8	17	10	5	3	0	43	1.6
C64	Kidney	0	8	1	4	3	1	1	4	22	0.8
C65	Renal pelvis	0	0	0	0	0	0	0	1	1	0.0
C67	Bladder	0	0	1	2	7	4	5	2	21	0.8
C69	Eye	1	14	6	14	12	5	4	6	62	2.3
C70–C72	Brain, nervous system	0	2	0	0	0	1	0	1	4	0.1
C73	Thyroid	1	0	14	8	12	14	10	3	62	2.3
C76	Other and unspecified	0	0	1	2	2	2	0	2	9	0.3
C77–C80	Metastasis	0	1	0	8	10	12	9	1	41	1.5
C81	Hodgkin disease	0	6	1	9	6	5	1	2	30	1.1
C82–C85	Non-Hodgkin Lymphoma	2	36	38	33	19	16	14	12	170	6.3
C90	Myeloma	0	0	0	0	0	1	0	0	1	0.0
C91–C95	Leukaemia	0	1	9	7	5	2	3	2	29	1.1
	All sites	24	146	216	422	541	565	384	388	2686	100

The distribution of cancers by site and sex is presented in Table 1, which shows a predominance of breast cancers (14.4%), non-Hodgkin lymphoma (7.8%) and non-melanoma skin cancers (7.6%). This table shows also that in men, prostate cancer (12.9%), nonmelanoma skin cancer (10.4%) and stomach cancer (10.3%) predominated, while in women, it was breast cancer (27.1%), cervix cancer

(11.2%), and non-Hodgkin lymphoma (6.3%) that were more observed.

Tables 2 and 3 show, respectively, the distribution of the different sites of cancer according to age for men and women.

3.2. Histopathological Aspects. The 5251 cases of cancer were subdivided in 3574 carcinomas (68.1%), 833 hematopoietic

TABLE 4: Distribution of cancers by histological nature.

Histological group	Histological type	Nb** of cases	%
Carcinomas 3574 cases; 68,1%	Adenocarcinomas	2099	40.0
	Squamous cell carcinoma	1238	23.6
	Carcinoma NOS*	155	2.9
	Urothelial carcinoma	35	0.6
	Medullar carcinoma	31	0.6
	Basaloid carcinoma	19	0.4
Hematopoietic tissue Cancers 833 cases; 15.9%	Non-hodgkin lymphoma	663	12.6
	Hodgkin disease	97	1.9
	Leukaemia	58	1.1
	Myeloma	15	0.3
	Kaposi sarcoma	225	4.3
	Fibrosarcoma	146	2.8
Sarcomas 581 cases; 11.0%	Leiomyosarcoma	38	0.7
	Rhabdomyosarcoma	35	0.6
	Osteosarcoma	30	0.5
	Chondrosarcoma	28	0.5
	Liposarcoma	27	0.5
	Angiosarcoma	19	0.4
	Malignant fibrous histiocyoma	19	0.4
	Ewing sarcoma	4	0.1
	Sarcoma NOS*	10	0.2
	Choriocarcinoma	50	1.0
	Retinoblastoma	38	0.7
	Wilms tumor	19	0.4
	Malignant teratoma	10	0.2
Embryonic and placental malignant tumors 143 cases; 2.7%	Yolk sac tumor	6	0.1
	Hepatoblastoma	5	0.1
	Seminoma	5	0.1
	Glioblastoma	5	0.1
	Gonadoblastoma	3	0.0
	Other	2	0.0
Other specified cancers 120 cases; 2.3%	Melanoma	83	1.6
	Granulosa tumor	19	0.4
	Mesothelioma	7	0.1
	Malignant schwannoma	8	0.2
	Carcinosarcoma	3	0.0
	All	5251	100

* NOS: not otherwise specified. **Nb: Number.

tissue cancers (15.9%), 581 sarcomas (11.0%), 143 embryonic and placental malignant tumors (2.7%), and 120 other histological types (2.3%) as shown in Table 4.

3.3. Children Cancers (under 15 Years). The children cancers were observed in 365 cases representing 7% of all cancers recorded, with a yearly average of 14.6 cases. Boys were affected in 218 cases and girls in 146 cases, with a sex ratio of 1.5. The average age of these children was 8.1 years old.

Histologically, we noted a predominance of lymphomas (219 cases, 60%) including 102 cases of Burkitt lymphoma, retinoblastoma (31 cases, 8.5%), and nephroblastoma (17 cases, 4.7%).

4. Discussion

Our study focused on epidemiological and histopathological analysis of cancers diagnosed during 25 years in Togo. It brings together all histologically confirmed cases across

FIGURE 1: Distribution of cancers according to age and sex. *unk: unknown.

the country because the laboratory of pathology of CHU-TOKOIN, is the only one in Togo for all requests of histopathological examination. So our study must put cancer in its epidemiological framework in Togo and constitute a basis for the establishment of a cancer register in our country.

We then observed during our study period 5251 cases of cancers proved histologically with a yearly average of 210 cases. This value is comparable to those observed in most African countries particularly Burkina Faso, but clearly inferior to those of western countries [1, 5, 6]. These differences are in part related to the unequal distribution of cancer throughout the world but also to the size of the populations investigated. They could also be explained by the weak frequentation of the health centers in developing countries, and where women are more affected by cancer. The sex ratio in our study is similar to those observed in Uganda, Algeria, and Brazil [1, 5]. This female predominance is even more pronounced in some countries such as Cameroon and Nigeria with a sex ratio of 0.7 [5, 7], contrary to the observations made in European countries or Asia where there is a clear male predominance [1, 8]. This female predominance of cancer in our countries is explained by the large proportion of breast and cervix cancers.

The average age of our patients is comparable to that of developing countries but lower than those observed in developed countries. This would be related to the longer life expectancy of these countries. The most common cancers for both sexes in our study (breast cancer, non-Hodgkin lymphoma, and nonmelanoma skin cancer) were different from those estimated by IARC Globocan where breast, cervix uteri, and prostate predominated [9]. Moreover Globocan estimated prostate and liver cancers the two main cancers in men. These estimations are different from our observations and may be due to the case of many patients who, after having wasted an invaluable time near the healers, consult

the medical practitioner only at the final stage of their illness. For these cases, most practitioners had found any samples for histological confirmation useless. It was mainly the case of liver cancer that account only for 2.2% of cases (11th overall). This frequency of liver cancer in our study reflects a little the real impact of this cancer in Togo. The diagnosis of the disease is most often based on clinical findings, especially when patients come to a very advanced stage of their disease. So, the histological diagnosis of such patients does not appear in our records and this would let think that liver cancer is rare in Togo, compared to some African countries like Mali, Cameroon, and Senegal, where liver cancer represents respectively 42.1%, 38.2%, and 36.8% of recorded cancers and where it occupies the first rank [5]. Indeed, Africa is a region with high incidence of liver cancer, but with very large variations from one country to another [3, 5, 6]. The establishment of a cancer register will help to catch up these cases for a better cancer assessment in Togo. For women, breast and cervix uteri cancers were more frequent corroborating data from the literature [1, 5, 9]. In our study we observed a decrease of cancer incidence in the last ten years. This may be due to sensitization on cancer prevention. We have no data on the survival estimation from cancer as it was a retrospective laboratory work.

Histologically we noted a predominance of carcinomas as in the study of Goumbri-Lompo in Burkina Faso where carcinomas represented 75.5% of cases [6]. The non-Hodgkin lymphoma accounted for 12.6% of cases, a value exceeding that of world literature. Indeed, the non-Hodgkin lymphoma represents 2.9% of cancers worldwide, 3.9% of cancers in Africa, and 5.1% in Sub-Saharan Africa but with significant variations of the frequency from one country to another [1, 5]. The high incidence of non-Hodgkin lymphoma in some parts of Africa is linked to infectious causes including viral and parasitic infection implicated in the genesis of some of the non-Hodgkin lymphoma including Burkitt lymphoma [10, 11]. Burkitt lymphoma accounted in fact for the most common children cancer, followed by retinoblastoma and Wilms tumor, as in most African countries [12–14].

5. Conclusion

Our retrospective study aimed to describe the epidemiological and histopathological aspects of cancers in Togo. It covered 5251 cases occurring at a mean age of 45.3 years with a slight female predominance. The most frequent cancers in this study were those of prostate for men and breast for women. For children, it was essentially Burkitt lymphoma and retinoblastoma. The high incidence of cancers in Togo shows the importance of this study and emphasizes on the necessity of the establishment of a cancer register, which is necessary to a national policy of prevention and fight against cancer in Togo.

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