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Oral Cancer Lethality in the Dental Department of Kinshasa University Hospital, Democratic Republic of the Congo

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Abstract

Background: Despite the scientific advances achieved during this century in cancer management, nevertheless, the cancer disease remains one of the most fatal sickens globally and little data are available on oral cancer mortality in most low-income countries including the Democratic Republic of the Congo. Aim: To assess the frequency of oral cancer mortality in the Department of Dental medicine at the Kinshasa University Hospital. Patients and Methods: A cross-sectional study based on the records of patients who died from oral cancer was conducted in the Department of Dental Medicine, Kinshasa University Hospital spanning over a period of 20 years (2000 to 2019). The data were collected from the records of patients with a histologically proven diagnosis of cancer. Pertinent parameters included Age, sex, stage of disease, histological type of tumor and probability of survival of patients were evaluated. Results: During the study, 889 patients were hospitalized in the Department. Out of 91 patients who died while in hospital, 49 deaths (53.8%) were from oral cancer in 57% males. Median age was 46.02 ± 19.6 years and sex ratio of male/female of 1.3. The epidermoid or squamous cell carcinoma (63.3%) was the most frequent histological type of malignancy, and the majority of deaths (96%) occurred at and advanced cT4NM clinical stage with 90% having less than 200 days prognostic survival chance. Conclusion: The frequency of lethality in the present study was high and constitutes a health problem concern in the

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Democratic Republic of Congo. This study emphasizes the primary role devoted to oral health professionals in education, population, prevention, early detection and early management of oral cancer.

Keywords: Oral cancer; Survival; Lethality; Kinshasa.

1. Introduction

If the emergence of oral cancer is contemporary, however, the signs and symptoms of oral cancer have been described in medical literature since ancient times [1]. The epidemiological and nutritional transitions currently observed in developing countries, the increase of the average life expectancy of the population altogether increase the incidence of chronic non-communicable diseases such as diabetes, hypertension, and cancer [2, 3]. At the world Cancer Day celebration in 2020, WHO stigmatized that cancer is the cause of one in six deaths globally, but that up to 50% of them can be prevented [4]. Oral cancers account for 40% of cancers of the upper aero digestive pathways [5] of which 3/4 of cases have been reported in developing countries [6]. They are deleterious on chewing function and phonation [7, 8], which negatively impacts the quality of life of the patient. Most oral cancers are diagnosed at late stages III and/or IV of the disease [9, 10], especially in those countries where the population consults at an advanced stage from several reasons including lack of information, lack of financial resources, poverty, economic issue, lack of adequate medical infrastructure etc.

Recent studies show that oral cancer is on the rise and is becoming the leading cause of death from oral conditions worldwide [11-13]. In 2018, there were 177.384 cases died from oral cancer worldwide [11]. By 2020 in Canada, the number of deaths from oral cancer is estimated at 1,500 peoples, including: 1.050 men and 440 women [14]. In 2018, 3.822 deaths related to lip-mouth-pharynx cancers were recorded in France, of which 76% were among male [15]. In Southeast Asia, oral cancer accounts for 40% of deaths [16]. Despite progress in the diagnosis and treatment of these cancers, their survival rate at 5 years remains below 63% [17, 18].

In Africa, the survival rates of patients with oral cancer do not exceed 10-25% compared to 55-60% for high-income countries [19]. In Democratic Republic of the Congo (DRC), there is no literature on the frequency of mortality or the average survival of patients with oral cancer. The aims of this study was the determine the frequency of mortality due to oral cancer and the average time of survival rates of patients with oral cancers at Kinshasa University Hospital.

2. Material and Methods

A cross-sectional study of patients who died from oral cancer in the Department of Dental medicine, Kinshasa University Hospital during the period spanning from 2000 to 2019 was carried out.

The data were retrieved from the hospitalization registry and patient medical records. The records of patients who were hospitalized and died from a histological proved oral cancer were included in this study. Any record of patients who died from oral condition other than oral cancer was excluded. Ninety-one files of patients died were thus selected. Out of them, only 49 cases of deaths from oral cancer were included. (Figure.1).Socio-demographic variables (age, sex) and clinical variables (stage of disease, histological phenotype, average survival in year) were evaluated. Data was stored by using Excel 2010 software and analysis on IBM SPSS20.0 software. Descriptive statistic was used and the Kaplan Meier plot test determined the probability of survival of patients.

The figure.1 gives the flow chart selection files of patients.
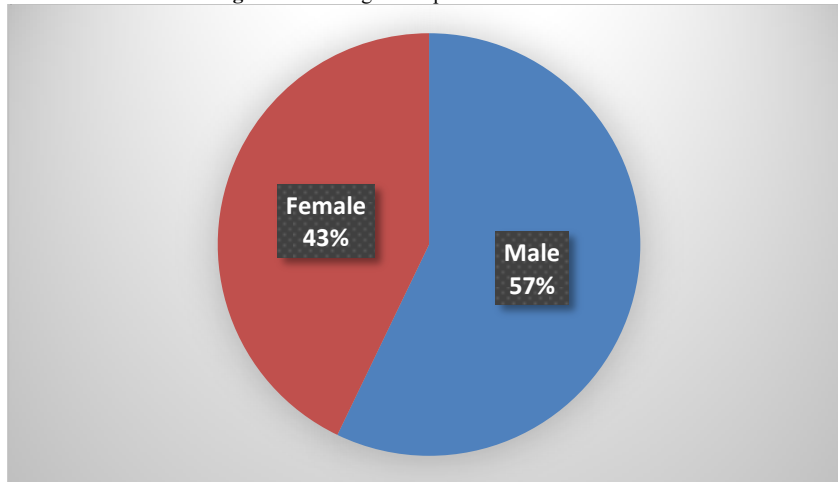
Figure-1. Flow chart selection files of patients
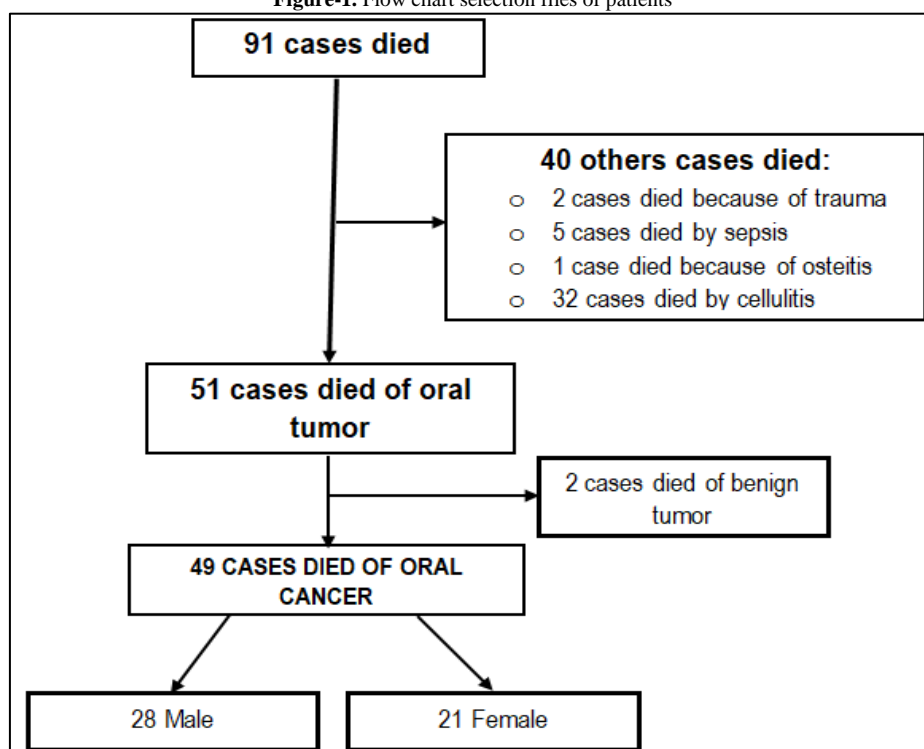
The study received approbation from ethic committee of the Department of Odonto-stomatology of the University Clinics of Kinshasa (Ref. n° CUK/DOS-0016).

3. Results

The figure 2 shows that more than 56% of dead patients were male.

Figure-2. Pie diagram of patient's sex distribution

The table 1 gives the distribution of patients according the age.

Table-1. Distribution of patients by age group (year)

| Age	Frequency	Percent
11-20 years	9	18,4
21-30 years	5	10,2
31-40 years	4	8,2
41-50 years	11	22,4
51-60 years	7	14,3
61-70 years	8	16,3
>70 years	5	10,2
Total	49	100,0

The average age was 46, 02 ±19, 6 year and the group age between 41-50 years was the most affected (22, 4%). The epidermoid carcinoma was the most frequent cancer which led to death (63,3%) as revealed by the figure 3.
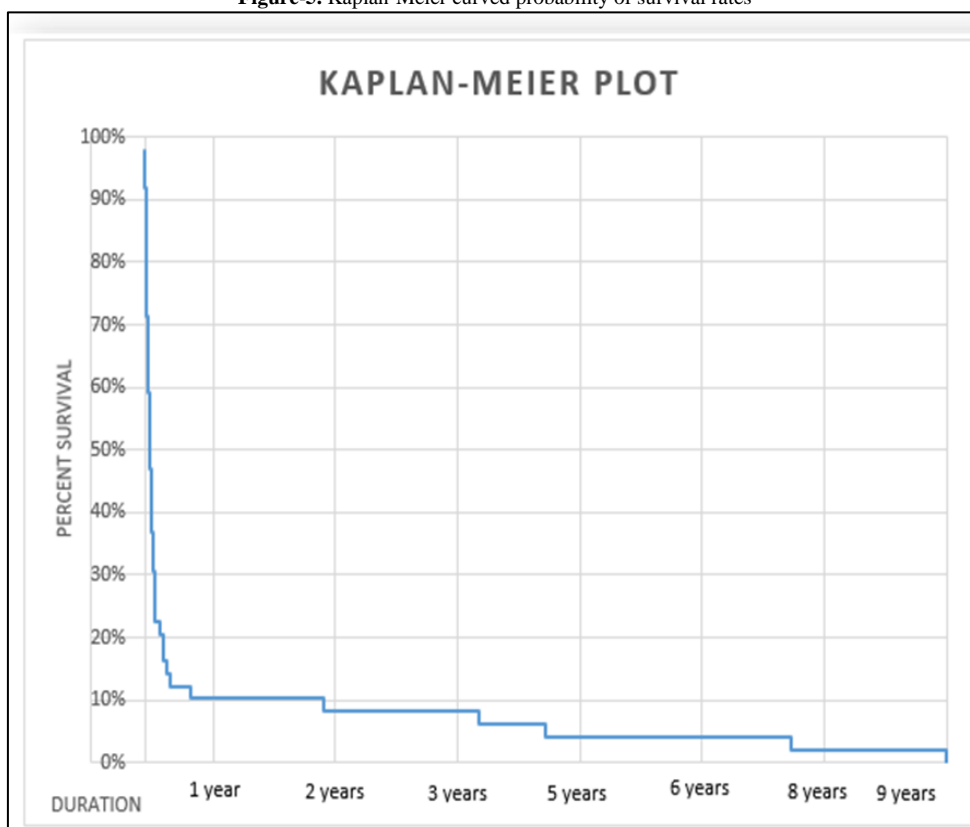
Figure-3. Clinical diagnosis
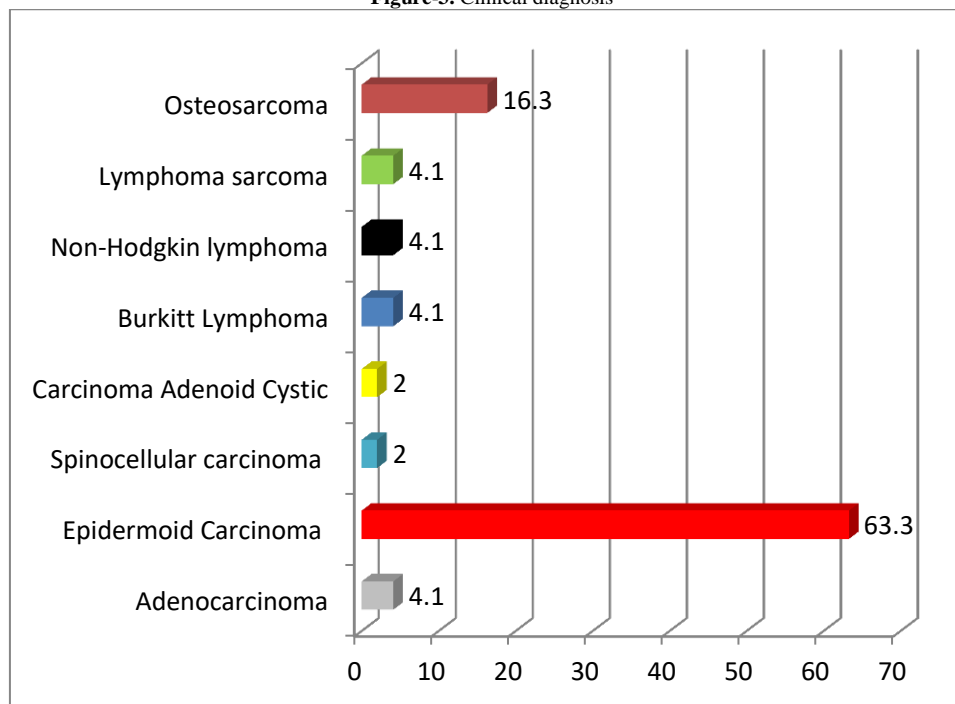
The stage T4NM (96%) was the stage correlated with more deaths (figure 4).

Figure-4. Distribution of patients according to clinician stage of tumors
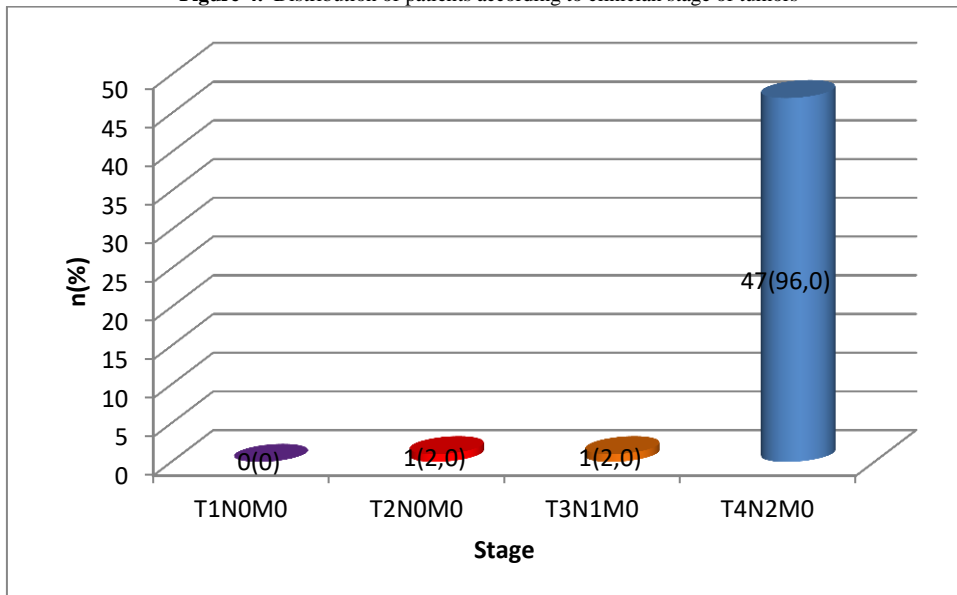
More than 90% of the patients had less chance to survive up to one year (figure 5).

Figure-5. Kaplan-Meier curved probability of survival rates

4. Discussion

The survival rate of patients with oral cancers in Africa is generally does not exceeds 10 to 25%. No studies in the DRC have investigated the mortality rate and average survival from oral cancer patients. Therefore, the aims of this study were to assess the mortality rate of oral cancer at Kinshasa University Hospital. The incidence of oral cancer mortality in our Department is 5.5%. Oral cancer was the most cause of death, with 49 out of 91 patients involved (53.8%). The present observation corroborates with the date from the International Dental Federation published in 2015, reporting that oral cancer was cause of dental death worldwide [12]. It must be noted that this situation is fearful, especially in African versus poor countries, where the majority of patients often consult at a very late stage that may only benefit from a palliative treatment. Additionally, the lack or poor health resources for prevention, diagnosis and practical in the management of oral cancers may also explain this high mortality rate. However, despite the commitments of African governments to spend 15% of their PIB on health, only 5% of health resources are devoted to the fight against cancer, with priority given to combat communicable infectious and parasitic diseases [20].

The number of patients who died occurred more in male (57%) rather than in females with a male/female sex ratio of 1.3. This result corroborates with those of the literature [15, 17]. The consumption of tobacco and alcohol could explain this trend, especially in countries where non-smoking legislation is weak [21, 22]. This leads to the abuse of the product mainly among young people [21]. Tobacco accounts for more than 25% of cancer deaths [22]. The age between 41 and 50 years was the most affected followed by age group between 61 to 70 years. This corroborates data from the literature [15, 17, 23]. Carcinogens such as tobacco and alcohol were the most widely consumed at the above age group. Unfortunately in Africa, the increase in smoking is complicated by the fact that the majority of new smokers are young people aged between 13 to 18, often at an incredibly young from 8 to 9 years old [21]. The increase in longevity that makes chronic non-communicable diseases such as cardiovascular disease, diabetes, cancer become more common and are among the chief causes of death worldwide [24].

Epidermoid Carcinoma remains the leading type of cancer found in the majority of deceased patients (63.3%). This finding is similar to the data found in the literature [5, 17, 25]. This pattern obviously is related to the histological structure of the oral mucosa build up from Malpighian epithelium undergoes changes as a result of environmental factors like Human papilloma viruses (HPV) and other genetic and epigenetic factors leading to a neoplasic proliferation [26].

The extension cT4NM stage (96%) correlated with more deaths. It is well-know that in poor settings, patients tend to consult at last with thus delayed diagnosis. In fact, most patients first consult several practitioners or even traditional practitioners before consulting specialists, as these lesions are sometimes seen in Africa countries like a bad fate or a curse casted out by the family or society. Ndongo et al. and Ly et al. confirmed these perceptions in Africa [27, 28]. in Addition, some authors had noted that in general more than 95% of cancer patients in Africa are diagnosed at an advanced stage [29, 30], and possibly contribute to high number of mortality incurred cancer.

The life expectancy of patients with oral cancer was low as that the majority of patients (90%) had a less probability of one year of survival upon cancer was diagnostic. The survival of patients with oral cancer patients remains a health problem in Africa in general. A study from Cameroon reported that 60% of oral cancer patients die in the same year of diagnosis [27].

These data differ from studies conducted in the West where life expectancy is on average 5 years [30, 31]. This difference may be related to the early detection and management of cancer patients in the Western hemisphere, in contrary, the right technical platform and the lack of clear policy are sometimes lacking in low-resourced countries in the handing of oral cancer patients.

5. Conclusion and Suggestions

Oral cancer is a public health problem in DRC with a very average low of survival. Thus, prevention, screening (diagnosis) and rapid management are necessary to avoid all these unfortunate complications.

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