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Research Article

Cancer Diagnosis In Tunisian Public Structures: Too Little, Too Late

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Abstract

Introduction: Cancer is a major public health problem in Tunisia with an increasing incidence that reached 20,000 new cases per year in 2020. Moreover, deaths related to a tumour cause, all tumours combined, is the leading cause of death in Tunisia since 2021. Despite the urgency of this situation, Tunisian patients suffer from delays in diagnosis and a lack of public resources for optimal care.

Objectives: In this work, we have tried to show the correlation between the delay in diagnosis and the increasing incidence of cancer and related deaths in the Tunisian population.

Methods: Our study highlights the metastatic nature of tumours in a cohort of 73 patients consulted in two public services, the Rabta Hospital as a regular service and the Salah Azaiz Institute as the national reference for the treatment of tumour diseases in Tunisia.

Results: The majority of patients presented with very advanced and metastatic cancers, although they came for an initial consultation. In addition, patients admitted to self-medicating with herbs, which complicates the disease.

Conclusion: This snapshot of the situation is intended to alert the authorities to the delay in cancer diagnosis in Tunisia and it's impact on public health..

Keywords: Cancer, Diagnosis, Self-medication, Metastasis, Public Structures

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Cancer is a major public health problem in Tunisia, and its incidence has been steadily increasing over the last few years. According to the Global Cancer Observatory (https://gco.iarc.fr/), the annual incidence in 2012 was around 12,000, while the estimated number of new cancer cases in 2020 is around 20,000, with lung, bladder, prostate and colorectal cancers being the most common in men, and breast, colorectal, lung, thyroid and cervical cancers in women.[1-3]

Cancer treatment in Tunisia typically includes surgery, radiotherapy and chemotherapy, depending on the type and stage of cancer.[4] However, cancer diagnosis and treatment remain challenging due to the limited number of dedicated public oncology centres and the high cost of private medicine sector.

In Tunisia, in addition to the regular public hospitals, there are a few public hospitals specialising in oncology that offer diagnostic, treatment and follow-up services for cancer patients. The Salah Azaiez Institute is the leading cancer research and treatment centre in Tunisia. Located in the capital Tunis, it offers a full range of oncology services, including radiotherapy, chemotherapy, oncological surgery, nuclear medicine and palliative care. The University Hospital Farhat Hached, located in Sousse, is a reference centre for on-

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cology in the central region of the country. Southern, the University Hospital Habib Bourguiba located in Sfax offers cancer treatment services including oncological surgery, radiotherapy and chemotherapy for the entire southern region of the country.[4]

Fragmented and limited access to oncology health services, including screening centres and medical facilities equipped for cancer diagnosis, de facto causes delays in cancer diagnosis. Tunisian patients also suffer from delays in cancer diagnosis for a variety of other reasons, including lack of awareness, early detection, cultural taboos, access to quality health services and adequate medical resources. These factors are compounded by another cultural and specific factor: self-medication by Tunisian patients, who prefer traditional medicinal plants to conventional treatments, sometimes even before consulting specialists, thus delaying and complicating diagnosis.[5,6]

The aim of this work is to get a concrete idea of the state of play of diagnosis and treatment in two Tunisian public oncology services in a limited period of time. A snapshot of cancer diagnosis in Tunisia.

Methods

Patients' Selection and Study Design

Our prospective study was conducted between January and May 2021 (5 months) at the oncology department of the hospital La Rabta Tunis and the Institute of Oncology Salah Azaiz, Tunis, Tunisia. The study included 73 patients, 24 from La Rabta and 49 from Salah Azaiz Institute, respectively.

We decide to subdivide our cohort as follows: Gender, age, primary consultation or not, metastatic status and self-medication status.

Ethical Standard

The author declares that all procedures contributing to this work met the ethical standards of the relevant national and institutional human subjects committees. All patients who participated in this study signed an informed consent form after being informed of the terms and issues of the study.

Results

The study was conducted between January and May 2021 (5 months) at La Rabta Hospital Tunis and the Salah Azaiz Institute of Oncology, Tunis, Tunisia. The study included 73 patients, 24 from La Rabta (32.87%) and 49 from the Salah Azaiz Institute (67.13%). The patients were divided according to gender, with 30 males (41.09%) and 43 females (58.91%). We also attempted to classify our cohort according to age, with 4 patients younger than 40 years (5.47%), 40 patients between 40 and 60 years (54.79%), and 29 patients older than 60 years (39.74%) (Table 1).

Table 1. Characteristic of the patient's cohort.

	Number	Percentage (%)
Public health care institution		
La Rabta Hospital	24	32.87
Salah Azaiz Institute of Oncology	49	67.13
Gender		
Male	30	41.09
Female	43	58.91
Age		
Younger than 40 years	4	5.47
Between 40 and 60 years	40	54.79
Older than 60 years	29	39.74

We then looked at the clinical characteristics of our cohort and found that 60 patients presented for an initial consultation (82.19%), while 13 patients presented for a tumour relapses (17.81%). Despite the fact that the majority of patients presented for a primary consultation, metastatic status was important, with 44 patients (60.27%) having developed metastasis. Of these patients, 33 (75%) presented for a first consultation (Table 2).

In order to understand the reasons for such an advanced clinical condition, we asked patients if they had taken any self-medication such as herbal decoctions and/or other folk medicines before deciding to seek medical advice. Only patients from the Salah Azaiz Institute responded to our questions, and 19 patients (38.77%) who were consulting for the first time in more reported using herbal and folk medicine as a treatment (Table 2).

Table 2. Working cohort clinical features

	Number	Percentage (%)
Consultation		
Initial consultation	60	82.19
Tumour relapse	13	17.81
Metastatic status		
Metastatic tumours	44	60.27
Non metastatic tumours	29	39.73
Metastasis despite first consultation		
Yes	33	75
No	11	25
Herbal self medication		
Yes	19	38.77
No	30	61.33
Herbal self medication before first consultation		
Yes	19	100
No	0	0

Discussion

With the increase in the incidence of cancer in Tunisia, deaths due to a tumour cause, all tumours combined, have become the leading cause of death in Tunisia since 2021, accounting for approximately 15.6% of all deaths, just after diabetic diseases (7.6%) and cardiovascular diseases (6.8%).[7]

This death is related to the advanced stage and metastatic status of the tumours at the time of consultation. Indeed, despite major improvements in cancer diagnosis and treatment worldwide, tumour invasion and metastasis are the main causes of tumour recurrence and patient morbidity, accounting for 90% of human cancer deaths.[8] The situation in Tunisia is even worse for several reasons, including delays in cancer screening and early detection programmes,[5] postponement of medical consultation due to the reduction of specialists and brain drain in recent years,[9] lack of adequate material, and finally, difficulties in accessing advanced cancer treatments, such as targeted therapies and immunotherapies, due to cost constraints and availability.[1,4,5] Other challenges include social and cultural factors, mainly self-medication and fear of conventional therapies, especially chemotherapy, due to misinformation and false information spread on social media.[10,11]

Indeed, despite some efforts to promote cancer-screening programmes in Tunisia (October Rose for breast cancer or November Bleu for bladder), cancer detection is still rudimentary. For example, breast cancer screening, including mammography, is available for women aged 40-69, but participation rates are suboptimal.[12] The difficulty in obtaining an oncological RDV is estimated at one to three months depending on the oncology center (e.g. 3 months in Sfax), and control RDVs usually take even longer. Treatment delays can sometimes reach 6 months, depending on the availability of radiotherapy equipment's or chemotherapy drugs; in private clinics, the delay is reduced to 2 weeks.[1,13]

The bureaucratic health insurance system plays its part in the tragic scenario of cancer-related deaths. The availability of certain drugs and procedures is limited and usually takes time to become effective, making them late and irrelevant.[14]

Human resources are also an important issue. In fact, Tunisian doctors are moving to private clinics and, even more dramatically for the country, to Europe - a real brain drain. In 2022, the number of doctors who emigrated was equal to the number of new recruits to the National Council of the Tunisian Medical Association, which means that half of all newly qualified doctors leave the country annually.[15]

In addition to all these logistical problems, we should highlight a social taboo regarding cancer, patients are stigmatised with the disease and this leads to delays in seeking medical care. Fear of being diagnosed with cancer, social stigma or cultural beliefs can prevent people from seeking timely medical care, especially in rural area.[16]

A contextual condition that has complicated the situation of cancer screening and medical advice in recent years is the COVID19 pandemic. In fact, the lockdown and the concentration of all the health structures in the fight against the virus related diseases have disrupted oncological consultations even more.[17,18]

The complex situation of delays in obtaining an RDV for consultation in addition to the cost of treatment and social ignorance about the disease encourage patients to resort to folk medicine and herbal remedies.[19] It is important to note that the use of traditional herbal medicines to treat cancer is dangerous and life threatening. Conventional cancer treatments are backed by rigorous clinical trials and are widely accepted by the medical community as effective in the fight against cancer. Although some traditional herbal medicines may contain active ingredients that have health benefits, their effectiveness in treating cancer has not been scientifically proven. Moreover, the use of herbs can lead to drug interactions, adverse side effects and potential complications, including interfering with the effectiveness of conventional cancer treatments.

It is therefore strongly recommended that traditional herbs or other unproven alternative approaches to cancer treatment are not substituted for proven conventional treatments. It is important to consult a qualified healthcare professional, such as an oncologist, to receive evidence-based treatment tailored to the patient's individual situation. Informed, evidence-based decision making is essential to ensure the best possible cancer treatment and to maximise the chances of a cure. Much work remains to be done to raise awareness of the potential risks of folk medicine in oncology, both among patients and in Tunisian society.

Conclusion

Our work highlight the urgent status of delay in diagnosis in public oncology departments in Tunisia, leading to highly metastatic tumours at first medical consultation and de facto a high rate of cancer-related deaths. The delay encourages patients to undergo folk medicine rather than conventional treatment, making cancer the leading cause of death in Tunisia since 2021.

Disclosures

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