

Medical Information from Internet for Tunisian Cancer Patients: A Double-Edged Weapon?

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Abstract

Background: Most cancer patients and/or their families consult the websites of scientific or patients' associations to find answers about diagnosis, treatment protocols and side effects, making internet nowadays the easiest way to get fast and updated information. Despite the fact that internet is since many years available in Tunisia, there is no data regarding its use for health information.

Aims: To identify the procedures and motivations of Tunisian online health information seekers and report the impact of online findings on cancer patient's attitude toward their disease and their oncologist.

Methods: We conducted a descriptive study using an individual, semi-structured, questionnaire-based interview was carried out from April to June 2017. Interviews were performed by staff members' oncology department at the Abderrahmane Mami Hospital in Tunisia. They were addressed to adult patients (aged ≥ 18 years) treated for localized or metastatic solid cancers. Statistical analysis included descriptive, bivariate and multivariate analyses.

Results: We interviewed 100 patients, mostly (67%) females, with a mean age of 55 years (18-78), and high-school graduated for 35% of them. Eighty eight percent (88%) of them answered to be well informed about their health condition by their oncologist, but in 73% of cases, it didn't prevent them from searching information in internet. Online health information seekers were either patients alone (19%) or family members (21%) or both (33%). Most online health information seekers were interested to learn about new treatments (64%), nutrition (55%), management of treatment toxicity (54%), supportive care (35%), alternative medicine (27%) and access to online cancer forums (19%). Three quarters of patients have no doubt about the web informations reliability. Online health information had an impact on patients' decisions in 57.5% of cases. Web data pushed 14% of patients to take parallel medicines or dietary complements without any prescription (i.e. graviola). Conflicting information compared to that received from the treating physician is reported in 33% of cases, leading to a lack of confidence for only 4% of them. High-school graduates and easy internet access were significantly associated with web use in univariate and multivariate studies (HR: 0.167 CI 95% (0.02- 0.97), HR: 0.09 CI95% (0.018-0.446) respectively)

Conclusion: Our study demonstrated that the web is an important source of health information for Tunisian cancer patients. Oncologists should be aware of online health information impact on patients' behavior and try to make it beneficial and safe.

Introduction

Easy and accessible online health information is nowadays provided by more than 100.000 medical websites [1]. Following world globalization, internet use in Tunisia increased slightly during the late few years (48%) and offered an improved communication technology [2,3]. In western countries, Internet became important and providential as a medical information source among cancer patients [4]. No data are available concerning Tunisians patients. Our study aimed to report the epidemiologic profile of Tunisian cancer patients acceding to Internet searching for health information and to analyze the factors related to their research for health purposes.

Methods

The survey was performed in the medical oncology department of Abderrahmane Mami hospital in Tunisia, between April and June 2017, on adult patients treated for cancer at various stages. Data of patients were collected from medical files.

An individual, semi-structured, questionnaire-based interview was carried out by physician from the department. Data about patients were collected from medical files. All patients gave their consent.

The data analysis for this study was descriptive in nature and summarized by descriptive statistics, calculating frequency distributions generated for patient characteristics and survey responses on Internet usage. We searched for correlations between patient features and internet with chi-square tests or Fisher's exact tests and statistical analyses were performed using the SPSS 20.0.

Results

We interviewed 100 patients, mostly females (67%), having a mean age of 55 years (18-78 years), from urban origin in 68%, high-school graduated in 35% of cases and

illiterate in 15% of cases. The majority of patients (77%) had internet access (Table 1). They have breast cancer (45%), colon cancer (13%), lung cancer (11%) or other cancers (31%). Metastatic disease was present in 50% of cases. A good performance status was noted in the majority of cases (88%) (Table 2). Eighty eight percent (88%) of the patients reported being well-informed about their health condition by their oncologist, but it didn't prevent them from consulting internet in 73% of cases as a complementary information resource.

Variable	N (%)
Gender:	
*Female	67 (67)
*Male	33 (33)
Age:	
*18-35	5 (5)
*36-50	38 (38)
*51-65	40 (40)
*66 and over	17 (17)
Education:	
*None	15 (15)
*Primary	18(18)
*Secondary	32 (32)
*High school or above	35 (35)
Socio economic level	
Low	12 (12)
Average	35 (35)
High	53 (53)
Internet availability	
Yes	77 (77)
No	23 (23)
Origin:	
*Urban	68(68)
*Rural	32 (32)
PS	
0	38 (38)
1	50 (50)
2	12 (12)

Table 1: Patient characteristic's.

	N (%)
Primitive disease	
Breast	45 (45)
Lung	11 (11)
Colorectal	13 (13)
Ovary	7 (7)
Other	24 (24)
Stage	
*Localized disease	50 (50)
*Metastatic disease	50 (50)

Table 2: Primitive disease and stage.

	N (%)
Internet Informations	
Yes	73 (73)
Patient	19 (26)
Family	21 (28)
Patient and family	33 (46)
No	27 (27)
Informations related to	
Treatment	64 (87)
Toxicity	54 (73)
Alternative medicine	27 (36)
Nutrition	55 (75)
Supportive care	35 (47)
Prognosis	25 (34)

Table 3: Internet interesting.

Online health information seekers (73%) were either patients (19%) or families (21%) or both (33%). Online seekers were interested in novel treatments (64%), nutrition (55%), treatment toxicities management (54%), supportive care (35%), alternative medicine (27%) and online cancer forums (19%) (Table 3). Majority of patients (75%) found internet information always reliable. Online health information had an impact on patients' attitude in 57.5% of cases. Online data incited taking medicines or dietary supplement without medical prescription in 14% of cases (i.e. graviola).

Conflicting information with those already given by physician was reported in 33% of cases, leading to lack of trust in physician in only 4% of cases. Most of patients didn't discuss with health caregivers about their need to look on internet for complementary information and data they found online.

Age, gender and primitive disease were not significantly associated with use of medical information

on internet in both univariate and multivariate studies (Table 4). In univariate analysis, stage of disease was significantly associated with use of medical information on internet (Table 4). In univariate analysis, stage of disease was significantly associated with use of medical information on internet.

Prognostic factors	p (univariate study)	p (multivariate study)
Age	0.334	0.656
Gender	0.384	0.637
Education	0	0
Socio economic level	0	0
Primitive disease	0.987	0.453
Stage	0.035	0.07
PS	0.761	0.675
Internet availability	0	0

Table 4: Prognostic factors and internet information.

High school graduates and internet availability was significantly associated with health internet use in both univariate and multivariate studies.

(HR: 0.167 CI 95% (0.02- 0.97), HR: 0.09 CI95% (0.018-0.446) respectively) (Table 4).

Discussion

Internet access is available for more than 5,800,000 users in Tunisia (48% of the population), situating our country at the ninth rank among African countries [2]. This penetration rate is lower than in western countries, like 86.4% for France and 88.5% for USA, with disparities in coverage between rural and urban areas [2,5]. For our part, a higher internet availability was seen among our patients because, mostly were living in urban areas. A study showed that worldwide, around 4.5% of all Internet researches are performed to find health-related information and around 40% of cancer patients acceded to the web looking for cancer-related information [1]. Among cancer patients in France, 73% used Internet to get informations, and this is probably related to the lack of receiving information from their physicians [6]. Despite them though that they were well informed about their health condition and satisfied with information given by physicians, 75% of our patients try to get information's from internet. Rains et al. reported that information obtained from web research was more likely to be perceived as useful by those who trusted their physician and less likely to be perceived as such by those who did not [7]. This explains why there was no lack of trust in

physician among almost all our patients. As seen in other series, few patients checked online health information with practitioner [8].

Our patients' needs in terms of information were in line with other series: self-care, treatment and complementary and alternative medicine were the most searched topics [9,12]. We observed a negative impact after Internet access in 33% of cases due to discordant information compared to that provided by the treating physician, leading to a lack of trust in physician in 4% of cases. This negative impact is reported in the literature, explained by the fact that online health information content is variable from a relatively « validated » peer reviewed or professionally reviewed to personal blogs, opinions, or anecdotes of other patients [13]. Comparatively to what we observed, online information could induce patient misinformation, distress, and an increasing behavior of self-diagnosis or self-treatment, like we observed for graviola use [10]. There is no doubt that online health information affects patient's attitude [1], as reported in our study. This information made them more aware about their health condition and helped them to create realistic expectations, promote self-care and participation [11]. Most of cancer patients in occidental series found online information reliable and had positive effect in coping with disease [1,6]. In the other side, some patients found that online information were too much to sift through and difficult to understand [1].

Many series reported also that online health seekers are younger patients, reside in urban areas, have completed secondary school or university and have a high income [8]. In our series, only high level education and internet availability were significantly associated with internet use. Our work is the first of its kind in Africa; it demonstrated that Tunisian cancer patients rely on internet as source of health information and as a tool to help them coping with disease, without devaluing the role of caregivers.

Conclusions and Perspectives

Tunisian oncologists have to be aware of the power of internet information among cancer patients. In fact, Internet sites could contain incorrect and unsubstantiated data, which might adversely affect cancer patients. Physicians should promote developing dedicated websites and show an open attitude toward internet and discuss online information with patients.

Ethics Approval and Consent to Participate

Approval was obtained of local committee of medical oncology department of Ariana to participate to the study.

Competing Interests

The authors declare no competing interest.

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