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Research Article

Abandonment of treatment and loss to follow up: a potential cause of treatment failure in patients with AIDS-related Kaposi's sarcoma

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Background: Management of patients with cancer is complex, multi-disciplinary, longitudinal and costly. Abandonment of treatment by patients and loss to follow up is a common scenario, especially in resource poor countries and severely compromises health outcomes.

Objective: To assess the commitment to drug treatment protocol of patients with Acquired Immunodeficiency Syndrome (AIDS)-Related Kaposi's Sarcoma at Kenyatta National Hospital, Kenya, over a 10 week period .

Methods: The study design was prospective, observational, cross-sectional period prevalence study on patients infected with human immunodeficiency virus (HIV) with Kaposi's sarcoma. Patients with histological diagnosis of Kaposi's sarcoma were sequentially enrolled into the study as they attended either the Haematology or Radiotherapy clinic or during their admission in the wards. The choice of the treatment protocol was left at the discretion of the attending physician. A pretested data collection form was used to collect demographic and clinical information about the patients, including treatments prescribed and completion of follow up.

Results: A total of 74 patients were enrolled into the study, 42 (56.8%) males and 32 (43.2%) females. The age ranged between 13 years to 55 years. Their treatment protocols included: Vincristine only, Vincristine plus Bleomycin, Vincristine plus Bleomycin plus Doxorubicin, Radiotherapy plus Vincristine and Radiotherapy only. Few of the patients were not assigned any antitumor treatment. Antiemetic and other conventional medicines were also prescribed when necessary. Fifty four (73%) of the patients abandoned treatment, five (6.8%) died, 15(20.3%) continued to attend clinic over the 10 week period. There was no significant association between sex and outcome (p=0.661).

Discussion: The results of this study demonstrate that abandonment of treatment is a major problem among patients on treatment for cancer in Kenyatta National Hospital in Kenya. Abandonment of treatment heavily contributes to poor clinical outcome hence complicating the burden of cancer in the country. It is therefore important to develop and establish follow-up systems to improve adherence to treatment for the cancer patients at Kenyatta National Hospital.

Key words: Abandonment of treatment, Loss to follow up, AIDS-Related Kaposi's Sarcoma

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1. Introduction

Cancer claims millions of lives every year all over the world. The cure rates are very low and clinical outcomes are uncertain. Despite advanced research and improved therapeutics in cancer management in the developed world, it is estimated that the number of cancer cases and deaths is expected to double world wide by 2030 (United States Statistic 1999-2010).

The news of cancer diagnosis is therefore never welcome and discussion about cancer still remains a taboo in many societies. This leads to denial, failure to accept diagnosis hence poor adherence to treatment. Despite much progress in cancer research, the cure for many adult cancers has remained elusive unlike in paediatrics where much success has been achieved and 7 out of 10 children with cancer are cured (Smith et al, 2010).

Various treatment modalities are currently available for the management of cancer. Regardless of the treatment modality used, the management process is longitudinal, complex and multidisciplinary; involving the patient, the family, healthcare provider, the health system and the society at large. Cancer therapy is associated with complications, drug and radiation toxicities, treatment failures and or disease relapse (Mwanda et al, 2005).

These complications and toxicities may lead to poor adherence to treatment .It is therefore critical that patients on anti-cancer therapy be followed up aggressively. It is during follow up, that the patients give feedback to the healthcare provider about the progress following initiation of treatment .The health care provider in return reviews the patient, evaluates disease response to treatment; scores the performance status of the patient and advices the patient and/ or family accordingly.

Abandonment (non-completion) of treatment and loss to follow up creates a hiatus in the management of the cancer patients and has been found to be one of the leading contributors to treatment failure in paediatric oncology. Studies in paediatric oncology have shown that abandonment of treatment and loss to follow up is a major contributor to treatment failure in children with cancer in developing countries ((Arora et al, 2007; Njuguna et al, 2014; Sitaresmi et al, 2010).

In the developed countries, toxicity related to treatment and relapse are the main causes of treatment failure. Abandonment of treatment or loss to follow is reduced due to intervention from the social services department who may take court action against the parent or guardian who fail to take their children to hospital. This extended support ensures that the patient receives treatment as scheduled and when necessary (Arora et al, 2007). Such support does not exist in Kenya. The level and impact of treatment abandonment is poorly documented hence the need for this study.

Kaposi's sarcoma (KS) is a tumour caused by human herpes virus-8 (HHV8); it was originally described by Moritz Kaposi in 1872. It became widely known as one of the AIDS defining illnesses in the 1980s. It is a systemic disease that presents with cutaneous lesions with or without involvement of internal organs. Four subtypes have been described: *Classic KS, (*affecting middle aged men of Mediterranean descent); *African endemic KS*, (common in young men within tropical Africa); *Iatrogenic KS*, (found in patients on immunosuppressive therapy); and *AIDS -related KS*.

The cutaneous lesions in KS are erythematous to violaceous with diverse morphologies ranging from macular, patchy plaques, nodular to exophytic lesions. Cutaneous KS lesions can be solitary and localized while the disseminated KS may involve the oral cavity, lymph nodes and viscera.

Classic KS tends to be indolent, presenting with lesions on lower extremities. *African endemic KS* and *AIDS-related KS* tend to be more aggressive involving the viscera (Chang et al, 1994).

AIDS-related KS presents with cutaneous lesions that begin as one or several red to purple macules, rapidly progressing to papules, nodules and plagues, with a predilection for the head, trunk, mucous membranes, lymph nodes and the viscera. Kaposi's sarcoma is over 300 times more common in AIDS patients than in renal transplant recipients (Beral et al, 1990).

Diagnosis of KS is made by tissue biopsy of the lesion. Treatment is based on the subtype and the extent of disease (localized versus systemic). Localized cutaneous disease may be treated with cryotherapy, intralesional injections of Vinblastine, Alitretinoin gel, Radiotherapy, topical immunotherapy such as Imiquimod, or surgical excision. Extensive cutaneous disease and/or visceral disease may require intravenous chemotherapy and immunotherapy. Discontinuation of treatment or reduction of drug dose is recommended when the disease is due to immunosuppressive therapy.

In the management of AIDS-*related KS,* highly active antiretroviral therapy (HAART) has been shown to induce disease regression. AIDS-*related KS* is not curable but it can often be effectively palliated for many years and this is the aim of treatment. The study set out to explore the level of abandonment to treatment and its impact on patients with AIDS - related KS attending clinic at KNH.

2. Methodology

2.1 Study design

The study design was prospective, observational, cross-sectional period prevalence on patients infected with HIV with KS on follow up at Kenyatta National Hospital.

2.2 Recruitment of participants

Male and female patients of any age who were HIV positive with histological diagnosis of KS and who were on follow up at the Haematology, Radiotherapy Clinics and in the Oncology wards of KNH were recruited after obtaining their consent. Patients with KS and not infected with HIV and those HIV infected who did not consent to be enrolled in the study.

Patients with histological diagnosis of KS were sequentially enrolled into the study during clinic attendance and during their admission into the oncology wards.

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2.3 Data collection and management

A pretested data collection form was designed to collect and document data including demographic details of the patient, past medical history and past hospital admissions. The form in addition provided for documentation of the treatment prescribed for KS and any other treatment that was considered necessary for the patient. Results of physical examination, systemic enquiry, laboratory findings, anatomic site of lesion and the changes observed at the site of lesion during treatment were documented.

2.4 Assignment to treatment

The attending physician assigned and prescribed the treatment protocol to the participants. The protocols included either single drug agent Vincristine or multiple drug agents such as Vincristine and Bleomycin; Vincristine, Doxorubicin and Bleomycin, or Vincristine and Radiotherapy and Radiotherapy only. A few patients were not prescribed any specific treatment for the KS. The choice of the treatment protocol was left at the discretion of the attending physician.

Follow up of the enrolled patients continued over a period of 10 weeks from the date of enrolment of each patient.

2.5 Statistical analysis and presentation of data

The results were analysed using the Instat Biostatistics program from the Department of Public Health Pharmacology and Toxicology University of Nairobi. Quantitative variables were described in medians, means and percentages while strength of association was tested using Pearson's Chi square test. Results were considered to be significant when P values were less than 0.05 ($P < 0.05$).

2.6 Ethical considerations

The study was carried out between September – December 2005 after ethical approval by the Kenyatta National Hospital (KNH) - University of Nairobi (UoN) Ethics and Research Committee (ERC) (Ref: KNH-ERC/01/3111). The ethics approval number is **P148/8/2005**.

3. Results

Seventy four patients aged between 13 to 55 years were enrolled into the study. Of these, 42 (56.7%) were males and 32 (43.2%) were females. Fifty four (73%) lived in the urban area (within Nairobi City and its suburbs), while 20 (27%) lived in the rural areas (**Table 1**).

Table 1: Demographic Data of Patients

	Groups	No. of Patients (N=74)	%
Gender	Male	42	57
	Female	32	43
Age Range	11-20	4	5
	21-30	20	27
	31-40	30	41
	41-50	15	20
	50 and above	5	5
Residence*	Rural	20	27
	Urban	54	73

** 6 months prior to the first hospital visit*

Table 2: Specific anti-tumour therapy and the outcome of follow up over 10 weeks

Treatment	Outcome of follow-up			
	Died	On therapy > 10 weeks	Abandoned treatment	Total No. of patients
None	0	2	5	7
RT	2	4	6	12
RT/Vin	0	0	1	1
Vin	0	2	1	3
Vin. A	0	0	3	3
ACT.D	1	0	1	2
Vin. B	2	7	35	44
Vin. B.A	0	0	2	2
Total	**5**	**15**	**54**	**74**

KEY: ***None*** *– no antitumor therapy was administered,* ***RT*** *- Radiotherapy,* ***Vin*** *– Vincristine;* ***A*** *- Adriamycin;* ***ACT.D*** *- Actinomycin-D;* ***B*** *- Bleomycin*

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Table 3: Relationship between sex of patient and outcome

Sex	Outcome of follow up			Total
	Admitted to hospital	Attended clinic over 10 weeks	Abandoned treatment within 10 weeks	
Female	2	5	25	32
Male	3	10	29	42
Total	**5**	**15**	**54**	**74**

Fifty four (73%) patients abandoned treatment, 5(6.8%) died, 15(20.2%) continued attending the clinic over the 10 week follow up period (**Table 2**).

Of the twelve patients who were on radiotherapy, six (50%) abandoned treatment at its initiation while four (33%) continued on treatment over the 10 week period.

Fifty five (74%) of the patients were on chemotherapy (with or without accompanying radiotherapy). Of these, forty four abandoned treatment while nine continued to get treatment over the 10 week period.

Seven (9%) patients were not on any specific treatment for KS, out of whom five were lost to follow up.

It was not possible to establish the reason for abandonment of treatment or the fate of the patients after they had abandoned treatment.

Twenty five (46%) of the fifty four who abandoned treatment were females while 29 (54%) were males (**Table 3**). However, there was no significant association between sex and outcome of follow up (p=0.661)

4. Discussion

Abandonment and loss to follow up has been shown to contribute to treatment failure in paediatrics (Bonila et al 2009, Smith et al 2010). Various factors are thought to contribute to abandonment of treatment and loss to follow up in cancer patient on treatment, including patient-related, treatment-related, healthcare provider-related and health system-related factors.

Patient-related factors are interplay between economic and psychosocial status of the patient or guardian, and which may cause some patients to abandon the prescribed treatment and turn to alternative and complementary medicine.

With regard to treatment-related factors, chemotherapy, radiotherapy or surgery is associated with adverse effects, most of which are not acceptable or tolerable to the patient and these may contribute to abandonment and loss to follow up.

Healthcare provider-related factors such as inadequate communication between the healthcare provider and the patient with regard to diagnosis, treatment, the associated toxicities and cost of treatment may lead to poor adherence to treatment and poor clinic attendance for follow up after treatment is completed (Arora et al, 2007).

Health system-related factors refer to the fact that, in developing countries like Kenya, cancer management is most often administered in a referral facility with complex logistical systems which makes it difficult for the patient to adhere to treatment.

The above factors may have contributed to the high levels of treatment abandonment found in this study. However, statistical association with each factor could not be established due to the small patient numbers and lack of contact after the abandonment of treatment (Arora et al, 2007; Sitaresmi et al, 2009; Njuguna et al, 2014).

5. Conclusion

This study confirms that abandonment of treatment is also a common phenomenon among adult cancer patients at Kenyatta National Hospital and its impact on treatment outcome cannot be ignored. Therefore, it is important to develop and establish follow up systems for the cancer patients in order to boost adherence to treatment and outcome.

Conflict of Interest Declaration

The authors declare no conflict of interest.

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