

Factors Associated with Delay in Presentation of Symptomatic Cancers among HIV Infected Persons in Plateau State, Nigeria

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Abstract

There is increased incidence of cancer worldwide but much of the burden of morbidity and mortality will occur in the developing world because of cancer associated infectious diseases of which HIV infection carries a large proportion. Site-based studies show that proportion of late stage cancer presentation range between 60% - 92% in the last 10 years. There is paucity of information on reasons for the late presentation. This study is aimed to find out the factors associated with delay in presentation of symptomatic cancers among HIV infected persons in Plateau State, Nigeria. A mixed method study consists of quantitative and qualitative component. Participants were sampled from HIV infected persons diagnosed with cancer and referred to the Oncology unit. Variables on Patient and health service factors associated with late presentation of cancers were collected. Quantitative data was analyzed using Epi info version 3.5.3 and Microsoft Excel while thematic analysis was done for qualitative data. There were 503 respondents and the mean age was 48.7 ± 13.5 years. Male sex OR 2.5, ($P = 0.002$); Farming occupation OR 1.7, ($P = 0.0005$) and Primary education OR 2.0, ($P = 0.0005$) were associated with delay. Majority of respondents 349(69%) presented more than six months after onset of symptom. Common symptoms were pain 462(45.70%), swelling 237(23.44%) and skin discoloration 210(20.77). Their Initial reaction was mainly the use of alternative remedies 234(46.5) CI 42.1 - 51.0. Up to 274(54.47%) of participants obtained diagnosis 3 months after presenting to a health facility. Labor-

atory related issues 199(39.56%) and long booking time 163(32.40%) were the most common reasons for delay. Delay was found to be both patient and services related. The study also suggests that cancer symptom awareness is poor among the participants. There is no tangible cancer prevention program in the HIV/AIDs treatment program. A more in-depth knowledge of cancer is required for both the sufferer and the care giver.

Keywords

Delay, Cancer, Presentation, HIV/AIDS, Factors

1. Introduction

Cancer is becoming the leading cause of death worldwide, with about 16.1% of these cancers found to have been linked to certain infection [1] [2]. The mechanism through which infections cause cancer vary. Some have been found to occur as a result of damage to cells due to long-term inflammation by bacterial, parasitic or fungal infection which can eventually transform to cancer in the presence of other factors such as smoking, alcohol, diet and hazardous exposures [3]. In viral infections, the pathogenesis is somewhat different, and the virus directly affects the genes inside the cells by inserting its own gene into the human cell nucleus taking control of the entire cell and redirecting its growth pattern causing the cell to grow out of control [4].

HIV is one of the viral infections implicated in “infection induced cancers” and a person infected with HIV has higher risk of developing cancer and dying from it compared to non infected persons [5]. Although cancer incidence was low in the developing world, it is now rapidly on the increase attributed to the high HIV infection rates [6]. This has made these same countries worst hit in terms of the burden of cancer morbidity and mortality [7]. Nigeria has the second highest world HIV burden and the prevalence of the disease vary across the 36 states of the country [8]. The HIV infected persons in Nigeria are therefore at high risk of developing cancer and even dying from it. Plateau State with an estimated population of about three million people had a HIV prevalence of 7.7% in 2010, ranking 6th in the country and remained steady until its decline to 3.6% in the year 2013 [9]. These HIV infected persons on the Plateau are therefore at risk of developing cancer [10]. Routine cancer screening among this group will help in early diagnoses of cancers thereby reducing mortality [11].

Cancer occurring in an individual with background HIV infection has been reported to be very aggressively compounded by the low immunity. Granted that the introduction of the Highly Active Antiretroviral Therapy (HAART) for HIV treatment can rise the immune system to normal levels following appropriate and consistent use, the immune system still remains damaged in its molecular components rendering the individual susceptible to developing cancer [12]. There is also increased risk of cancer in individuals with low immunity when

compounded by HIV infection [13]. Despite the aggressive nature of cancer in these groups of persons, cancer treatment remains the same as in non HIV infected individual. The outcome in the HIV-Infected persons however has been reported to be very poor compared to the non HIV infected resulting in high morbidity and mortality [14].

Treatment of cancer in the general population even in the best hospitals until recently has remained difficult and associated with high mortality all over the world. A multidisciplinary and multimodal approach to cancer treatment using a combination of “Early Detection” through various screening techniques and “Targeted Evidence Based Treatment” has improved the outcome [14]. Cancer when detected early even in the HIV infected is easier to treat, cheaper in terms of cost, has better prognosis, and cure can be achieved, there is increased survival rates, lower morbidity and mortality.

Report on the pattern of cancer presentation in Nigeria however revealed that about 80% - 85% of common malignancies in Nigeria presented late with a mortality of about 90% associated with the late stage disease presentation in the patients. Reasons for the late presentation ranged from Ignorance, lack of awareness of cancer, low socioeconomic status, myths about cancer compounded by lack of trained personnel in the field of cancer and inadequate hospitals equipped for cancer management lead to the delay in diagnosis [15]. Other factors are competing use of alternative medicine such as Traditional/Herbal medicines as first line of treatment instead of orthodox medicine. This usually is cheaper, easily accessible and may relieve some symptoms but in the long run cancer continue to progress to late stage [16]. To reduce the high mortality due to late presentation of cancer in the HIV infected persons in our setting, we need to improve on early diagnosis.

Although HIV infection is known to increase the risk of cancer in infected persons, little is known about cancers among our HIV infected patients, if they present late and the reasons for the delay. We analyzed the length of time it takes to initiation definitive cancer treatment for HIV infected persons with cancer in Plateau State from the time symptom was first noticed.

2. Materials and Methods

A mixed method study design, consisting of qualitative and a quantitative component. The study protocol was approved by the ethical review board of the Jos University Teaching Hospital, Faith alive Foundation Hospital Jos, the Nigeria Field Epidemiology and Laboratory Training Program (NFELTIP) and Center for Disease Control USA in Nigeria.

Consenting participants were sampled from HIV infected persons who were already diagnosed with cancer and those with symptoms suggestive of cancer referred from the various HIV treatment facilities to the Jos University Teaching Hospital. Cancer patients presenting to the Oncology unit for treatment who were diagnosed HIV positive during routine work up investigations were also enrolled. Histological diagnosis was done for suspected cases. Case files at referral

centers were consulted to confirm diagnosis for participants with multiple cancers who could not give correct information about the primary cancer they had.

Informed consent was obtained from all participants. Data was analyzed using Excel version 6.0 and Epi info version 3.4.5.

3. Results

There were 505 respondents, Males were 252(50.1%) and females 251(49.9%). Majority (45%) were in the age range 36 - 55 years and the mean age was 48.7 ± 13.5 years. Most of the respondents 432(85.9%) were married, 362(74%) were self-employed while 141(26%) were government workers. Majority of the respondents, 401(93%) had some education ranging from Primary school to Degree level, only 37(7.4%) did not have any formal education. Logistic regression showed that there was significant relationship between socio-demographic factors and late presentation of cancer: Age range 36 - 45 years OR 2.7, ($P = 0.0005$); Male sex OR 2.5, ($P = 0.002$); Farming occupation OR 1.7, ($P = 0.0005$) and Primary education OR 2.0, ($P = 0.0005$). Religious affiliation was not a significant factor ($P = 0.115$). Commonest cancer was Kaposi sarcoma 173(31.63%) followed by Breast cancer 89(16.27%), Prostate cancer 74(13.53%), Bladder cancer 44(8.95%), Colonic cancer(6.97%) and Cervical cancer 24(4.38%) ranked 5th in descending order while the least frequent was Thyroid and lung cancer 2(0.36%) each. The most frequent symptoms among respondents was pain 462(45.70%) followed by swelling 237(23.44%) and skin changes 210(20.77). Delay from first time symptom was noticed to first presentation to health facility was 11(27%) delayed 0 - 3 months, while 123(29%) delayed 3 - 6 months and 349(69%) delayed > 6 months (**Figure 1**). Service related factors: Length of time from presentation to a health facility to obtaining histological diagnosis and initiation of treatment 0 - 3 months 200(39.76%), while 274(54.47%) waited 3 - 6 months and 29(5.77%) waited > 6 months. Reasons for treatment initiation delay were Laboratory related issues 199(39.56%), Long booking time to see specialist 163(32.40%), Missed appointments 93(18.49%) and Co-morbid factors in patient 48(9.54%).

Analysis of the type of cancers found among HIV respondents indicated that Kaposi sarcoma 173(31.63%) was the commonest occurring cancer among the respondents, however 44(8.04%) respondents had multiple cancers (**Table 1**).

Health facility visit on account of cancer related symptoms

Patient mediated treatment actions

Laboratory related issues 199(39.56%) and Long booking time 163(32.40%) were the most common reasons for delay in initiating treatment (**Table 2**).

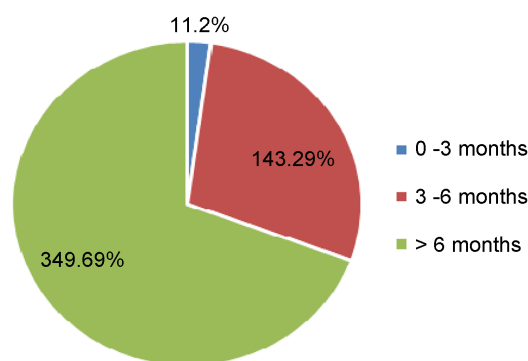
4. Discussion

The main finding in this research is there was delay in presentation of cancers among the study population. Using a modified Andersen's model, Phase one delay was due to "Patient mediated factors"; Phase two and three delay was "service mediated".

Patient mediated delay

Table 1. Type of cancers among the respondents (n = 547), Plateau State late presentation of cancer in HIV infected study 2015.

Types	Frequency	Percent (%)
Kaposi sarcoma	173	31.63
Breast cancer	89	16.27
Prostate cancer	74	13.52
Cancer of the bladder	49	8.95
Colonic cancer	38	6.94
Cervical cancer	24	4.38
Endometrial cancer	17	3.10
Soft tissue sarcoma	14	2.55
Testicular cancer	12	2.18
Squamous-cell carcinoma	12	2.18
Ovarian cancer	10	1.82
Liver cancer	10	1.82
Pancreatic cancer	9	1.63
Gastric cancer	8	1.44
Renal cancer	6	1.09
Esophageal cancer	4	0.72
Penile cancer	4	0.72
Lung cancer	2	0.36
Thyroid cancer	2	0.36
Melanoma	2	0.36

**Figure 1.** Pie chart showing length of time from onset of symptom to first presentation of respondents (n = 503) to health facility, Plateau State late presentation of cancer in HIV infected participants study of 2014.

In phase one, majority of the respondents experienced their symptoms for more than 3 months before seeking medical attention at a health facility. This could be due to the way individual interpret symptoms which led to taking appropriate action. In this study, some of the symptoms participants experienced were vague, not unusual in HIV infection and therefore might not have been regarded as a sign of a more serious health problem. This agrees with Whitaker,

Table 2. Showing reasons for delay respondents (n = 503) prior to first presentation at a health facility, Plateau State late presentation of cancers in HIV infected participants study of 2015.

Reason for delay	Frequency	Percent (%)	95% Confidence Limits
Tried Alternative remedies	234	46.5	42.1 - 51.0
Symptom considered not serious problem	43	8.5	6.3 - 11.4
Fear of unknown	45	8.9	6.7 - 11.9
Lack of funds	87	17.3	14.2 - 21.0
Visit chemist	52	10.3	7.9 - 13.4
Self-medication	24	4.8	3.1 - 7.1
Traditional belief	18	3.6	2.2 - 5.7

Katriina L who reported in their study that symptoms that occur in daily life are not usually regarded to be related to cancer [17]. Cromme, Susanne K and colleagues had a contrary finding, “worrying about wasting GP time rather than non recognition of symptom was a more cogent reason for delay in help seeking among their cancer patients” [18].

Pain and swelling were however strong reasons for seeking medical attention among the participants. Increasing intensity of pain, increasing size of a mass among others were strong reasons to abandon alternative measure and to seek medical help. This finding is supported by a study reported by Whitaker KL where they found pain (72%) and lump (70%) were associated with highest level of help seeking [19]. Pain however is a symptom that can be present at early or late stage of the disease depending on the type of cancer. In this study, worsening pain especially when it become incapacitating prompted participants to seek help. Increasing size of lump being visible on the other hand could also have been interpreted as a more serious problem prompting presentation to a health facility.

Majority of respondents delayed due to preference for alternative methods of treatment first.

Traditional beliefs about cancer is known to play an important role in the African setting such as stated by some responds “*I believe cancer is a disease that cannot be treated by medical doctor therefore it's no use visiting a doctor*” could have influenced their choice of alternative treatment first. This agrees with the study of Ibrahim N.A. *et al.*, they found believe in spiritual healing to be one of the major reason for delay among women with breast cancer [20].

Service mediated delays

Participants experienced considerable delay after presenting to health facilities. Reasons for delay ranged from long turnaround of diagnostics investigations and complementary investigations. Others were long booking time due to high patients load and appointments times. Reasons for missed appointments ranged from workers strikes, to public holidays falling on appointment days when clinics are not open to patients. Pace *et al.* found similar result in their

study among breast cancer patients in Rwanda. They reported a median system delay of up to 5(five) months and it was significantly associated with more advanced disease [21].

Another important factor is that the first doctor patient came in contact with at the primary or even secondary health care did know what to do. Macleod and his colleagues also reported in their study that significant factor for system delay was failure of the practitioner to recognize symptoms and to act appropriately which also supports our findings [22].

5. Limitations

1) There is no standard definition of late presentation of cancer therefore “Patient and Provider delay of three months from the time patient first noticed a symptom to first presentation at a health facility” was adopted for this study.

2) Stage of the disease was not used in this study because there was lack of required instruments for accurately staging the disease.

3) There was possibility of recall bias and some patients were not sure of the type of cancers they had. Case notes were then used to extract information and sometimes inconclusive due to lose sheets.

6. Conclusion

The factors for delay in our study are intricately inter-related. The study also suggests that cancer symptom awareness is poor among the participants. There is no tangible cancer prevention program in the HIV/AIDs treatment program. A more in-depth knowledge of cancer is required for both the sufferer and the care giver.

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References

- [1] de Martel, C., Ferlay, J., Franceschi, S., Vignat, J., Bray, F., Forman, D., *et al.* (2012) Global Burden of Cancers Attributable to Infections in 2008: A Review and Synthetic Analysis. *The Lancet Oncology*, **13**, 607-615.
[https://doi.org/10.1016/S1470-2045\(12\)70137-7](https://doi.org/10.1016/S1470-2045(12)70137-7)
- [2] Plummer, M., de Martel, C., Vignat, J., Ferlay, J., Bray, F. and Franceschi, S. (2016) Global Burden of Cancers Attributable to Infections in 2012: A Synthetic Analysis. *The Lancet Global health*, **4**, e609-e616.
[https://doi.org/10.1016/s2214-109x\(16\)30143-7](https://doi.org/10.1016/s2214-109x(16)30143-7)
- [3] Deeken, J.F., Tjen-A-Looi, A., Rudek, M.A., Okuliar, C., Young, M., Little, R.F. and Dezube, B.J. (2012) The Rising Challenge of Non-AIDS-Defining Cancers in HIV-Infected Patients. *Clinical Infectious Diseases*, **55**, 1228-1235.

- <https://doi.org/10.1093/cid/cis613>
- [4] Hatakeyama, M. and Higashi, H. (2005) Helicobacter Pylori CagA: A New Paradigm for Bacterial Carcinogenesis. *Cancer Science*, **96**, 835-843. <https://doi.org/10.1111/j.1349-7006.2005.00130.x>
- [5] Bonnet, F., Lewden, C., May, T., Heripret, L., Jouglu, E., Bevilacqua, S., *et al.* (2004) Malignancy-Related Causes of Death in Human Immunodeficiency Virus-Infected Patients in the Era of Highly Active Antiretroviral Therapy. *Cancer*, **101**, 317-324. <https://doi.org/10.1002/cncr.20354>
- [6] Ziegler, J.L. and Buonaguro, F.M. (2009) Infectious Agents and Human Malignancies. *Frontiers in Bioscience*, **14**, 3455-3464. <https://doi.org/10.2741/3464>
- [7] Kanavos, P. (2006) The Rising Burden of Cancer in the Developing World. *Annals of Oncology: Official Journal of the European Society for Medical Oncology*, **17** (Suppl 8), viii15-viii23. <https://doi.org/10.1093/annonc/mdl983>
- [8] Federal Republic of Nigeria Global Aids Response Country Progress Report Nigeria GARPR 2015 ABUJA, NIGERIA National Agency for the Control of AIDS (NACA).
- [9] Gowmwalk, N.E. (2012) Seroprevalence of Human Immunodeficiency Virus (HIV) in Plateau State, Nigeria. *Journal of Infection in Developing Countries*, **6**, 860-869.
- [10] Bashorun, A., Nguku, P., Kawu, I., Ngige, E., Ogundiran, A., Sabitu, K., *et al.* (2014) A Description of HIV Prevalence Trends in Nigeria from 2001 to 2010: What Is the Progress, Where Is the Problem? *The Pan African Medical Journal*, **18**(Suppl 1), 3. <https://doi.org/10.11604/pamj.suppl.2014.18.1.4608>
- [11] Goedert, J.J., Hosgood, H.D., Biggar, R.J., Strickler, H.D. and Rabkin, C.S. (2016) Screening for Cancer in Persons Living with HIV Infection. *Trends in Cancer*, **2**, 416-428. <https://doi.org/10.1016/j.trecan.2016.06.007>
- [12] Natl, J. (2000) Highly Active Antiretroviral Therapy and Incidence of Cancer in Human Immunodeficiency Virus-Infected Adults. *Journal of the National Cancer Institute*, **92**, 1823-1830. <https://doi.org/10.1093/jnci/92.22.1823>
- [13] Grulich, A.E., Li, Y., McDonald, A., Correll, P.K., Law, M.G. and Kaldor, J.M. (2012) Rates of Non-AIDS-Defining Cancers in People with HIV Infection before and after AIDS Diagnosis. National Centre in HIV Epidemiology and Clinical Research, Darlinghurst.
- [14] Barnes, T.A., Amir, E., Templeton, A.J., Gomez-Garcia, S., Navarro, B., Seruga, B., *et al.* (2017) Efficacy, Safety, Tolerability and Price of Newly Approved Drugs in Solid Tumors. *Cancer Treatment Reviews*, **56**, 1-7. <https://doi.org/10.1016/j.ctrv.2017.03.011>
- [15] Fatimah, A. (2009) Epidemiology and Incidence of Common Cancers in Nigeria. Cancer Registry and Epidemiology Workshop, Lagos.
- [16] Merriam, S. and Muhamad, M. (2013) Roles Traditional Healers Play in Cancer Treatment in Malaysia: Implications for Health Promotion and Education. *Asian Pacific Journal of Cancer Prevention*, **14**, 3593-3601. <https://doi.org/10.7314/APJCP.2013.14.6.3593>
- [17] Whitaker, K.L., Scott, S.E., Winstanley, K., Macleod, U. and Wardle, J. (2014) Attributions of Cancer “Alarm” Symptoms in a Community Sample. *PloS One*, **9**, e114028.
- [18] Cromme, S.K., Whitaker, K.L., Winstanley, K., Renzi, C., Smith, C.F. and Wardle, J. (2016) Worrying about Wasting GP Time as a Barrier to Help-Seeking: A Community-Based, Qualitative Study. *The British Journal of General Practice. The Journal of the Royal College of General Practitioners*, **66**, e474-e482.

<https://doi.org/10.3399/bjgp16x685621>

- [19] Whitaker, K.L., Smith, C.F., Winstanley, K. and Wardle, J. (2016) What Prompts Help-Seeking for Cancer “Alarm” Symptoms? A Primary Care Based Survey. *British Journal of Cancer*, **114**, 334-339. <https://doi.org/10.1038/bjc.2015.445>
- [20] Ibrahim, N.A. and Oludara, M.A. (2012) Socio-Demographic Factors and Reasons Associated with Delay in Breast Cancer Presentation: A Study in Nigerian Women. *Breast*, **21**, 416-418. <https://doi.org/10.1016/j.breast.2012.02.006>
- [21] Pace, L.E., Mpunga, T., Hategekimana, V., Dusengimana, J.M., Habineza, H., Bigirimana, J.B., *et al.* (2015) Delays in Breast Cancer Presentation and Diagnosis at Two Rural Cancer Referral Centers in Rwanda. *The Oncologist*, **20**, 780-788. <https://doi.org/10.1634/theoncologist.2014-0493>
- [22] Macleod, U., Mitchell, E.D., Burgess, C., Macdonald, S. and Ramirez, A.J. (2009) Risk Factors for Delayed Presentation and Referral of Symptomatic Cancer: Evidence for Common Cancers. *British Journal of Cancer*, **101**, S92-S101. <https://doi.org/10.1038/sj.bjc.6605398>



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