

Malignancies in HIV infection

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Abstract

HIV is associated with various malignancies. AIDS defining malignancies are Kaposi's Sarcoma, B cell non- Hodgkin's lymphoma, Primary CNS lymphoma & cervical cancer.

Key words: Malignancies, HIV infection, Kaposi sarcoma.

People with HIV have more than twofold increased risk of malignancy; about 30% to 40% of them will develop malignancy [1]. The relationship between HIV & cancer became evident early during the HIV/AIDS epidemic in 1981. AIDS defining malignancies are Kaposi's Sarcoma, B cell non- Hodgkin's lymphoma, Primary CNS lymphoma & cervical cancer. Non AIDS defining malignancies are anal cancer, lung cancer, Hodgkin lymphoma & liver cancer [2]. Although the incidence of AIDS-defining cancers has decreased with the use of antiretroviral therapy, non-AIDS-defining cancers have increased. Among HIV patients increased risk is 3 times for lung cancer, 29 times for anal cancer, 3 times for liver cancer & 13 times for haematological cancer. Reasons for the increase of malignancies among HIV patients are increasing HIV/AIDS population, people living longer & not dying from opportunistic infections & increase in smoking.

Pathogenesis of Cancer in HIV is manifold [3]. Many are virally-induced cancers, some due to immune dysregulation, decreased immune surveillance, increased susceptibility to carcinogens and endothelial/epithelial cell abnormalities. HIV activates proto-oncogenes, inhibits tumor suppressor genes & induces genetic instability. In vitro studies have shown that the tat (transactivator of transcription) gene product from HIV increases the expression of the proto-oncogenes c-myc, c-fos & c-jun and downregulate the tumor suppression gene p53 in adenocarcinoma cell lines [4].

Kaposi sarcoma is the most common tumour in people with HIV infection. Non- Hodgkin's lymphoma is the second most common tumour in individuals with HIV; though studies show a decline in incidence since the introduction of highly active antiretroviral therapy (HAART) [5], AIDS-related lymphomas (ARLs) have

increased as a percentage of first AIDS Defining Illness. The two commonest subtypes are diffuse large B-cell lymphoma (DLBCL) & Burkitt lymphoma/leukaemia (BL). The development of ARL has been shown to be related to older age, low CD4 cell count & no prior treatment with HAART. Median survival in the post-HAART era is approaching those in the HIV-negative population & depends critically on histological subtype & stage of the disease.

Primary central nervous system lymphoma (PCNSL) is defined as a non-Hodgkin lymphoma (NHL) confined to the cranio-spinal axis without systemic involvement. AIDS-related PCNSL is characteristically high-grade diffuse large B-cell or immunoblastic NHL. Primary effusion lymphoma (PEL) is an unusual rare form (approximately 3%) of HIV-associated non-Hodgkin lymphoma. Patients with PEL are usually HIV-positive men presenting as growth in a liquid phase in serous body cavities such as the pleura, peritoneum & pericardial cavities without identifiable tumour masses or lymphadenopathy.

Women with HIV infection are more likely to have infection with HPV 16 or 18 than women who are HIV negative. They also have a higher prevalence & incidence of CIN than HIV-negative women [6]. The incidence of anal cancer in people living with HIV is up to 40 times higher compared with the general population & it occurs at a much younger age. The highest risk is in HIV-positive men who have sex with men (MSM) who have an incidence of 70–100 per 100 000 person years (PY) compared with 35 per 100 000 PY in HIV-negative MSM [7].

Hodgkin lymphoma (HL) has a 10 to 20 fold increased incidence in HIV patients in comparison with the HIV-negative population. It tends to present more frequently

in advanced stage at diagnosis, with extranodal involvement, especially bone marrow infiltration & with a higher proportion presenting with B symptoms and poor performance status than in the general population. The outcome of HIV patients with HL has dramatically improved after the introduction of HAART. HIV-positive patients have a two-to five-fold risk of developing a non-melanoma skin cancer. Actinic keratoses are very common.

Among Testicular germ cell cancers, seminoma (as opposed to non-seminoma germ cell tumours) occurs more frequently in HIV. Penis cancer is five-to-six times commoner in HIV despite antiretroviral treatments. The uncircumcised state, poor hygiene, smoking, lichen sclerosis and HPV are the principal risk factors. Patients with HIV-related non-small cell lung cancer present at a younger age & with more advanced disease than their HIV-negative counterparts. Regarding Hepatocellular carcinomas (HCC), HIV affects the natural history of HCV infection in two important ways: first, it increases the likelihood of chronic infection following the acute episode and second, it hastens the development of cirrhosis once chronic infection is established posing important implications for the subsequent development of HCC. HIV positive patients with colorectal adenocarcinoma are significantly younger, have more advanced disease with an increased prevalence of right-sided tumours. More studies are needed to assess the risk, associated factors for prompt management of malignancies in AIDS. The role of more aggressive chemotherapy regimens & earlier starting HAART therapy in patients who have non-AIDS-defining cancers needs to be clarified. Whether the same chemotherapy regimens could be applied with success in HIV-infected populations is still debatable. Finally periodic screening and proper monitoring for the various malignancies in at risk population is mandatory to reduce the mortality and improve the quality of life among HIV patients.

Kiran VH et al noticed malignancy in 62 % of their study population, out of this 62 % were males and 38% were females, 95% were receiving ART, Predominantly the patients were in STAGE 4 and NHL was the most common malignancy in our study. CD4 count has no correlation with the incidence of malignancy [8].

How to cite this article?

Rabindran, Gedam DS. Malignancies in HIV infection. *Int J Med Res Rev* 2015;3(6):538-539. doi: 10.17511/ijmrr.2015.i6.130.

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