title

Non-AIDS-defining cancers among HIV-infected individuals in the highly active antiretroviral therapy era. Case report

authors

Jacek Kowalski • Grażyna Cholewińska

Hospital for Infectious Diseases in Warsaw

summary

Malignancies are very important cause of morbidity and mortality in HIV-infected patients. The introduction of highly active antiretroviral therapy (HAART) has resulted in decrease of AIDS-defining cancers (ADC) and improving the quality of life of HIV-positive individuals. The widespread use of HAART has worked in a large number of older subjects living with HIV. However, at the same time, it increased the prevalance of some other types of cancers. HIV-related lung cancer becomes an increasingly important problem in the era of HAART. Prospective clinical trials are needed to define the optimal detection and treatment strategies for this cancer in HIV-infected patients.

key words

AIDS, cancers, HAART

address

Jacek Kowalski

Hospital for Infectious Diseases in Warsaw
Department No.3
Wolska 37 Str • 01-201 Warsaw • Poland
tel./fax. +48 22 33 55 204
e-mail: jacekkowalski1982@gmail.com

Introduction

The occurrence and spectrum of cancers have continued to grow. It also concerns, with no exceptions, HIV-positive patients of both genders and all ages. We have just entered the third decade of HIV epidemic and experience has taught us that several neoplasms are linked with advance HIV infection (AIDS-defining cancers-ADC). There also exist non-AIDS-defining cancers (NADC), causes of which may be completely different (1).

Along with AIDS-defining cancers such as Kaposi sarcoma, non-Hodgkin lymphoma and cervical cancer, whose number has dropped since the introduction of highly active antiretroviral therapy (HAART), there are several non-AIDS-defining cancers (NADC) that include lung cancer, whose number seems to be rising as has the proportion of mortality associaded with incerased longe-life of the HIV-infected population (2). This has been a very popular and up-to-date issue and often mentioned in medical publications recently. It is still unclear whether NADC described in literature have really increased their occurrence or are merely the result of increased surveillance of HIV-positive patients. Detection and reporting of these cancers in HAART era may also reflect consequences of increased immune activation, including Immune Reconstitution Inflammatory Syndrome (IRIS), and decreased immune system surveillance as well as direct effects of HIV activity. That malignancies might constitute a second epidemic event within the AIDS epidemic.

The NADC appear to have earlier onset and worse prognosis in HIV-infected patients than in the general cancer population. Much remains to be learned about risk, risk reduction, optimal treatment and drug interactions. Among different types of malignancies incidences of Kaposi sarcoma and central nervous system lymphoma have decreased. Those of prostate and breast cancer have remained relatively constant, whereas those of other lymphomas (e.g. non-Hodgkin lymphoma – NHL and Hodgkin disease) and of cervical, anal and lung cancers have increased (3, 4). Changes in incidence of cancers associated with HIV since the antiretroviral therapy era has presented in tabl.1

Table 1. Changes in incidence of cancers associated with HIV since the antiretroviral therapy era in 1998

Cancers:	Tendency in HAART:
Kaposi sarcoma	↓
Central nervous system lymphoma	↓
Lymphoma (non-Hodgkin)	↑
Lymphoma (Hodgkin disease)	↑
Cervical cancer	↑
Anal cancer	↑
Lung cancer	↑
Prostate	↔
Breast	↔
Hepatoma	↔

Objective

In the years 2002–2009, in the Hospital for Infectious Diseases in Warsaw, at the Department for Intravenous Drug Users (IDU), 438 HIV/AIDS patients were hospitalized. Among them 23 (5.25%) – 3 women and 20 men, of average age of 43.8, were diagnozed with cancer, and among them, 70% were NADC. Out of these NADC malignacies included: 5 cases of liver cancer, 2 lung cancer, 2 testis cancer and 2 prostate cancer.

Out of all the HIV-positive patients diagnosed with cancer, twenty received antiretroviral therapy (ART) (including 13 individuals with NADC and 7 individuals with ADC). Three others with diagnosis of carcinoma of the liver, were not treated due to severe liver disfunction and consequently died of hepatocellular carcinoma (HCC). Only six patients treated with antiretroviral drugs, at the time of recognition of cancer, HIV-1 RNA were less than 50 copy/ml. In all six cases the ARV treatment was successful. Table 2 shows types of cancers among six patiens had.

Table 2. Malignancies in HIV-positive hositalized IDU found during successful ART

ADC	number of patients	NADC	number of patients
lymphoma	1	lung cancer	1
cervical carcinoma	1	skin cancer	1
		retinal astocytoma	1
		Hodgkin disease	1

Case report

The case regards a patient with lung cancer: A 51-year-old man, diagnosed with human immunodeficiency virus infected 11 years before who was hospitalized and treated with highly active antiretroviral therapy. Since the age of 24, the patient had been a heavy smoker and intravenous drug user (mainly heroine). At the beginning of hospitalization he was in phase B1 according the Centers for Disease Control and Prevention (CDC) definition. Since 05.07.2002 he was treated with different combination of ART including: azidothymidine (AZT), lamivudine (3TC), stavudine (d4T), efavirenz (EFV), saquinavir (SQV), nelfinavir (NFV), lopinavir/ritonavir (LPV/r), fosamprenavir/ritonavir (FVP/r). Since the patient has been a drug addict was undergoing drug vacation. Between January 2007 and May 2009 (2 and 4/12 years) he was in a penitentiary unit and his immunological status at the end of his stay was CD4+ 548 cells/μL, CD8+ 1172 cells/μl, HIV-1 RNA 85 copy/ml. In February 2009 in his X-ray of the lung, thoraces computer tomography and bronchoscopy, lung cancer was confirmed (histological specimen – *ca planoepitheliale*) – Fot. 1, 2.

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