



# The Brazilian Journal of INFECTIOUS DISEASES

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## Letter to the editor

# Breast cancer among human immunodeficiency virus (HIV)-infected patients: the experience in Brescia, Northern Italy

Dear Editor,

Breast cancer is a non-acquired immunodeficiency syndrome (AIDS) defining malignancy that does not seem to increase in incidence within the human immunodeficiency virus (HIV)-infected female population. To this date, very few cases of breast cancer in HIV-infected women have been recorded in the literature.

In a recent issue of the Brazilian Journal of Infectious Diseases, we read with interest the article by de Andrade et al.,<sup>1</sup> in which nine breast cancer cases that occurred in a cohort of 860 HIV-infected women followed in Rio de Janeiro from May 1996 until September 2009 are described. They estimated an incidence rate of breast cancer in this population of 133 cases per 100,000 person/years, similar to that observed in the general female population of Brazil.

Up to June 2011, our cohort of HIV-infected patients followed in the Clinic of Infectious Diseases and Tropical Medicine in Brescia (Northern Italy) included 5,253 subjects. Among these, 3,455 (65.77%) had regular follow-up, 777 (14.79%) died, and the remaining ( $n=1,021$ ; 19.44%) were lost to follow-up. Ten breast cancer cases have occurred between 1999 and 2009<sup>2</sup>: from those, one case was interestingly identified in an HIV-infected man.

The HIV-infected women of our cohort with breast cancer had a median age at diagnosis of 42 years (range 33-62 years). Two patients had concomitant diagnosis of HIV-infection, while in the others breast cancer was diagnosed later (within four to 19 years after HIV diagnosis). Eight women referred heterosexual intercourse as their mode of HIV exposure, while one was an intravenous drug user. Two patients had an AIDS-defining event before cancer. At breast cancer diagnosis, median CD4+ T-cell count was 424 cells/mm<sup>3</sup> (range 60-2,158 cells/mm<sup>3</sup>), and three patients were receiving HAART with an undetectable HIV viral-load. Histopathological analyses showed not only infiltrating ductal carcinoma, but also a case of infiltrating lobular carcinoma and a case of mixed ductal and lobular carcinoma. All but one were hormone receptor

positive. As the breast cancer diagnoses were performed at earlier stages, every woman underwent surgical treatment; adjuvant or neo-adjuvant chemotherapy was given in four cases, and three patients also received radiation. Two deaths have occurred, both due to breast cancer progression: these two patients died 32 and 49 months after the breast cancer diagnosis, respectively. All the other patients are still alive and disease-free, with a median survival time of 77 months (range 32-94 months).

Following, we describe separately the breast cancer case diagnosed in the 65-year-old Italian man. In May 2008, seven years after diagnosis of HIV infection, he developed a painless nodule near the nipple of his left breast. He was submitted to mastectomy and axillary dissection: histopathological study showed ductal carcinoma, staging was T1c/N1a/M0. At breast cancer diagnosis, he was receiving HAART with undetectable HIV viral load, and his CD4+ T-cell count was 467 cells/mm<sup>3</sup>. He was later treated with local radiotherapy and, as the tumour was hormone receptor-positive, he received tamoxifen 20 mg/daily. He is still alive without signs of breast cancer disease or metastasis.

Breast cancer is the most common cancer and the leading cause of female cancer death among women in Italy: between 2003 and 2005, it accounted for 24.9% of the total number of female cancers and for 16.3% of the overall number of cancer deaths among women. The incidence of breast cancer in Italian HIV-infected women appears to remain stable over time. We found a standardized incidence ratio (SIR) of 0.91 (95% CI: 0.47-1.74), similar to that found by Polesel et al. for the period from 1997 to 2004.<sup>3</sup>

In our study, patients with breast cancer were relatively young, with a median age of 42 years (range 33-62 years), which is similar to the age found in the study by de Andrade et al., but is significantly lower than the median age of breast cancer in Italy, where the incidence rate increases with age, reaching its highest levels at ages 65-69 years.

The majority of the women in our study did not have an AIDS-defining disease, and the median CD4+ cell count at

presentation of breast cancer (424 cells/mm<sup>3</sup> with a range from 60 to 2,158 cells/mm<sup>3</sup>) demonstrated mild immunosuppression.

In contrast with the Brazilian study, where in two cases surgery could not be performed due to serious clinical conditions, in our case study all female patients underwent surgical treatment and, moreover, full doses of systemic anti-cancer therapies could be used, and the presence of HIV infection did not influence the toxicity of chemotherapy. These factors could explain why our patients had a better survival outcome: five of the nine Brazilian patients died with a median survival of 12 months, while only two of our nine female patients died, 32 and 49 months after breast cancer diagnosis, respectively.

We also found a male breast cancer: to date, only two cases have been reported in young HIV-infected men.<sup>4,5</sup> Male breast cancer is also very uncommon in HIV-uninfected people: worldwide, it accounts for almost 1% of all breast malignancies, with an annual incidence in Europe that has been estimated not to exceed 1 out of 100,000. Moreover, while the incidence of female breast cancer is rising, the incidence of male breast cancer remains almost stable worldwide.

The review of breast diseases encountered in our HIV-infected population indicates that both men and women living with HIV infection and modest immunosuppression, including those treated with HAART, may present with neoplastic breast condition: breast cancer merits concern and close scrutiny also in the clinical picture of HIV infection.

The close monitoring we apply for HIV infection and treatment represents an opportunity to institute recommendations to prevent cancer: we have to increase awareness of breast cancer in HIV-infected patients, also in men, and to encourage all HIV-positive women to participate in breast cancer screening. We have to also consider earlier mammography exam than in the general population, as these patients might be subject to a risk of developing breast cancer earlier in life.

## Conflict of interest

All authors declare to have no conflict of interest.

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