



Simona Cioaia¹, Carlos Tornero^{1*},
Eugenio Sanchez² and Maria Jose
Alos²

¹Department of Internal Medicine, Hospital Francesc De Borja, Gandia, Spain

²Department of Radiology, Hospital Francesc De Borja, Gandia, Spain

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*Corresponding author: Carlos Tornero, Department of Internal Medicine, Hospital Francesc De Borja, Gandia, Spain, E-mail: Tornero_car@gva.es

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Case Report

Care burden derived from the introduction of an early Lung Cancer Screening Program in high risk HIV-infected patients

Summary

We describe the care burden derived of a lung cancer screening program in HIV high risk patients. In a well selected group with the described criteria, one annual low-dose thoracic computed tomographic exploration can be applied to a 7.2% of the patients attended (95%CI 4.2-9.6), with at least one follow-up exploration in another 1.3%.with the generation of at least two extra visits for explanation of the protocol and results. If smoking habit does not change over the next two years, another 4.3% of the patients will have met the inclusion criteria. Early detection of lung cancer with low-dose thoracic computed tomographic could be of interest in HIV infected patients because the increased of risk, but would imply an increase in care burden that must be taken into account.

Case Report

Lung cancer is the cause of important morbidity-mortality that could be reduced by annual low-dose thoracic computed tomographic (LDCT) screening of high risk patients [1]. Human immunodeficiency virus-infected individuals are at an increased risk of developing lung cancer, which moreover tends to manifest at an earlier age and in more advanced stages of the disease [2-5]. Early detection therefore could be of interest in this scenario, but would imply an increase in care burden that must be taken into account. We describe our experience during the first year with a program of this kind.

Between March 2016 and February 2017, the HIV-infected patients followed-up on in our units were invited to participate in an LDCT lung cancer screening program. Candidates for inclusion were required to be over 45 years of age, smokers of over 30 packs-year, with regular follow-up and undetectable viremias during the last year. These criteria were chosen based on previous literature and the early age of presentation in patients with HIV infection [1-5]. Patients with suspect nodules were entered in the general lung nodule management protocol. We describe the number of patients offered to participate versus those finally attended, the reasons for exclusion, the degree of acceptance, adherence to protocol, and the number of explorations performed and extra consultations generated.

During the one-year study period we attended 373 HIV-

infected patients (68% males) with a mean age of 46.5±10.6 years, of which 212 were over age 45 (57%). Fifty-five percent were active smokers (mean 15±16.3 packs-year). Sixty-three patients (17%) met the criteria referred to age and smoking risk.

Thirty-four of these patients were invited to form part of the protocol because had regular follow-up and undetectable viremias during the last year. Four of them initially declined and another three failed to return for the subsequent visits. The rest of the subjects were excluded due to detectable viremia or non-adherence to the visits during the previous year.

Baseline LDCT was performed in 22 patients, with three more under follow-up. Two and four patients are pending follow-up and baseline exploration, respectively. Thus, at least one LDCT exploration will be made in 7.2% of the patients attended (95% CI 4.2-9.6), with at least one follow-up exploration in another 1.3%. If smoking habit does not change over the next two years, another 16 patients will have met the inclusion criteria referred to age and smoking risk (i.e., another 4.3% of the patients).

Following first screening performed in the context of usual scheduled follow-up, a visit was established to explain the protocol and formalize informed consent, with at least one other visit to explain the results and provide counseling on smoking cessation.

Comments

The increase in incidence of lung cancer among HIV-infected individuals has generated interest in extending screening strategies to this population [6-8], with the accumulation of information on their usefulness. Variable results have been obtained, with the recording of a relevant findings rate of up to 2%. However, little information is available on the associated care burden – this aspect being useful for planning the introduction of screening protocols of this kind. The inclusion criteria vary among studies. In our strategy, emphasis was placed on earlier age [5] and smoking risk versus current or past immune depression or the CD4/CD8 ratio which, although also associated to increased risk, are not always easy to establish and could increase the incidence of false-positive findings. On the other hand, it does not seem that the computed tomography findings differ from those obtained in non-HIV infected or non-immune depressed individuals [9]. We also have been very demanding in requiring strict adherence to follow-up and virological control, though even so there were losses of radiological visits.

In our experience, low-dose thoracic computed tomographic (LDCT) lung cancer screening based on the described criteria can be applied to under 10% of all HIV-infected patients, with the generation of at least two extra visits for explanation of the protocol and results. It is necessary to select the most implicated patients in order to avoid losses and offer LDCT screening to those patients that may benefit most from the strategy.

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