Clinical HIV and AIDS Journal

COPD in HIV Infected Patients

Agostini Marcela*

Center of High Studies of Sciences in Human and Health Sciences, Rosario headquarters, Inter-American Open University (CAECIHS), Rosario, Santa Fe, Argentina

Mini Review

Despite the arrival of antiretroviral therapy (ART), the epidemic of the Human Immunodeficiency Virus (HIV) is still a global health crisis with a high burden of respiratory disease among infected people. While the first complications of the epidemic were fundamentally opportunistic infections, the improve of survival showed the appearance of non-infectious diseases that are associated with chronic respiratory symptoms and lung impairment [1].

Obstructive ventilatory defects and reduced diffusion capacity are common findings in adults, and the association between HIV and chronic obstructive pulmonary disease is increasingly recognized. There is synergy between viral factors, opportunistic infections, conventional influences such as tobacco smoke and exposure to biomass fuel, and potentially. The immunological effects of ART in the development of chronic obstructive pulmonary disease associated with HIV [2-4].

The effectiveness of antiretroviral therapy in controlling HIV infection has led to the highest HIV positive population at risk of chronic diseases. Through an exhaustive search of main databases, this review summarizes the information on associations between Chronic Obstructive Pulmonary Disease (COPD), asthma, and HIV infection. Asthma and COPD are more prevalent in populations infected with HIV; 16-20% of individuals with HIV infection suffer from it. When the infection is poorly controlled, it worsens spirometric capacity, accelerating the decline in lung function by approximately 55 to 75 ml/year.

It has been observed that up to 21% of HIV infected population have obstructive ventilatory defects and HIV reduces the diffusion capacity in more than 50% of patients [5, 6].

Recent studies of lung function in people infected with HIV have shown a high prevalence of airway obstruction, altered bronchodilator reversibility and impairment of diffusion capacity. Compared to people not infected with HIV and people with well-controlled HIV disease, people infected with HIV with high viral load or lower CD4 cell count have more airflow obstruction, a greater decrease in lung function and possibly more serious diffusion impairment [7].

Individuals infected with HIV seem to have an increased risk of obstructive lung diseases, although this represents the increase of emphysema, chronic bronchitis, asthma, or a combination of these disorders has not been fully evaluated. Although part of the increase in obstructive pulmonary disease, especially COPD, may be related to smoking and drug abuse, the apparent risk of COPD remains high in people infected with HIV. Recent studies of lung function in HIV-infected persons have elucidated some factors that may be important in the pathogenesis of obstructive pulmonary disease in HIV such as: a poor control of HIV contributes to COPD and decreased lung function, metabolic disease and inflammation associated with asthma and airway hyper reactivity [8].

Drummond and Shirley5 showed an accelerated decrease in respiratory function (FEV1 and FVC) in patients with low CD4 levels. Madeddu et al. concludes that the HIV virus is the most likely risk factor for COPD regardless of age and smoking habit [4]. Study by Popescu et al. demonstrated a significant correlation between the CD4 count in bronchoalveolar fluid and COPD in seropositive patients [9]. Recent study by Makinson et al. showed that COPD was not associated with Hepatitis C but significantly associated with HIV status in smokers aged more than 40 years [10].

Risso et al. in his study he investigated other factors that could be correlated with COPD [11]. One of them is the body mass index (BMI) which is associated with poor COPD prognosis when it is low. Other factors were studied such as the use of cannabis, use of intravenous drugs, depression, low viral replication activity and no significant relationship was found.

In his study the CD4 count below its normal value if it is associated with COPD. It also shows as aggravating factors the exposure to smoke and aging.

Chronic lung disease will become the third most common cause of death by 2030 in the general population. Early detection and proper management is a priority to improve the prognosis and quality of life of patients. In turn, the diagnosis of COPD reinforces smoking cessation, involves a thorough study of pulmonary function by spirometry, 6-minute walk test and carbon dioxide diffusion test (CDDT) and lung cancer screening [10, 12-14].

Article Information

DOI: 10.31021/chaj.20181103
Article Type: Review Article
Journal Type: Open Access
Volume: 1 **Issue:** 1
Manuscript ID: CHAJ-1-103
Publisher: Boffin Access Limited

Received Date: 14 August 2018
Accepted Date: 22 August 2018
Published Date: 27 August 2018

*Corresponding author:

Marcela Agostini
Center of High Studies of Sciences in Human and Health Sciences, Rosario headquarters
Inter-American Open University (CAECIHS)
Pellegrini 1618, Rosario, Santa Fe, Argentina.
Tel: +0341-4356510
E-mail: Marcela.Agostini@UAI.edu.ar

Citation: Agostini M. COPD in HIV Infected Patients. Clin HIV AIDS J. 2018 Aug;1:103

References

1. Lupo S, Welker G, Agostini M, Lupo S. Chronic pulmonary disease in HIV-positive patients with preserved immunity Rev. Méd. Rosario. 2018; 84: 11-16.
2. Gingo MR, George MP, Kessinger CJ. Pulmonary function abnormalities in HIV-infected patients during the current antiretroviral therapy era. Am J Respir Crit Care Med. 2010; 182:790–796.
3. Kristoffersen US, Lebech AM, Mortensen J. Changes in lung function of HIV-infected patients: a 4.5-year follow-up study. Clin Physiol Funct Imaging. 2012; 32: 288-295.
4. Madeddu G, Fois AG, Calia GM. Chronic obstructive pulmonary disease: An emerging comorbidity in HIV-infected patients in the HAART era? Infection. 2013; 41:347-353.
5. Drummond MB, Kirk GD. HIV-associated obstructive lung diseases: insights and implications for the clinician. The Lancet Respiratory Medicine. 2014; 2(7): 583-592.
6. Sampériz G, Guerrero D, Lo´pez M, Valera JL, Iglesias A, et al. Prevalence of and risk factors for pulmonary abnormalities in HIV-infected patients treated with antiretroviral therapy. HIV Med. 2014;15(6):321-329.
7. Gingo MR., Morris A, Crothers K. Human Immunodeficiency Virus–Associated Obstructive Lung Diseases. Clinics in chest medicine. 2013; 34(2): 273-282.
8. Calligaro GL, Gray DM. Lung function abnormalities in HIV-infected adults and children. Respirology. 2015; 20(1): 24-32.
9. Popescu I, Drummond MB, Gama L, Coon T, Merlo CA, Wise RA et al. Activation-induced cell death drives profound lung CD4(+) T-cell depletion in HIV-associated chronic obstructive pulmonary disease. Am J Respir Crit Care Med; 2014 Oct: 190(7):744-755.
10. Makinson A, Hayot M, Eymard DS, Ribet C, Raffi F, et al. HIV is associated with airway obstruction: a matched controlled study. Aids. 2018; 32(2): 227-232.
11. Risso K, Guillouet SF, Valerio L, Puglièse P, Naqvi A, et al. COPD in HIV-infected patients: CD4 cell count highly correlated. PloS one.2017; 2(1).
12. Bigna JJ, Kenne AM, Asangbeh SL, Sibetcheu AT. Prevalence of chronic obstructive pulmonary disease in the global population with HIV: a systematic review and meta-analysis. The Lancet Global Health. 2018; 6(2): e193-e202.
13. Fitzpatrick ME, Kunisaki KM, Morris A. Pulmonary disease in HIV-infected adults in the era of antiretroviral therapy. Aids.2018; 32(3): 277-292.
14. Ronit A, Lundgren J, Afzal S. Airflow limitation in people living with HIV and matched uninfected controls. Thorax Published Online.2018; 211079.