



RESEARCH ARTICLE

CARDIOVASCULAR MANIFESTATIONS IN HIV POSITIVE YOUNG PATIENTS

Dadasaheb Maindad, *Gayatri Gawade Maindad, Palange, B. and Bhagwat, R.

Department of Biochemistry, BVDUMC, Pune, India

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ABSTRACT

In the past few years disturbing reports have begun to accumulate about young, relatively healthy HIV positive men who have developed heart disease or suffered heart attacks. Researchers and health-care providers treating people with HIV are taking these reports seriously, and increasing attention has been devoted to cardiovascular disease at recent medical conferences. It remains to be determined whether these cardiovascular manifestations are attributable to HIV infection itself, to antiretroviral drug therapy, to a high prevalence among HIV positive people, of traditional risk factors that pose a danger for the population at large -- such as tobacco smoking, older age, male sex, and family history -- or to some other not-yet know. As our hospital is one of the biggest ART center and there are approximately 10622 HIV positive registered cases out of that 4313 pts. are on ART and 6309 are PRE ART pts.so we thought of conducting this study.

Key words: Cardiovascular Abnormalities, Young HIV pts., CD4 cells, WHO Staging, Opportunistic Infections, ART.

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INTRODUCTION

The human carnage caused by the HIV pandemic, that began about 30 years ago is difficult to comprehend. More than 40 million people had been infected by the end of 2010 and there are now approximately 5 million New infections (including 600 000 babies born with HIV) and 3 million deaths every Year. HIV/AIDS (acquired immunodeficiency syndrome) is now the second leading cause of disease in the world and can produce a sometimes bewildering and quite staggering array of clinical syndromes and illnesses. The mucocutaneous, gastrointestinal, respiratory, and neurological manifestations can be dramatic and have attracted a lot of attention. Although HIV-related heart disease is common, it is frequently overlooked because it is either subclinical or produces nonspecific symptoms such as breathlessness and fatigue. That is mistakenly attributed to other problems such as anemia. Some form of heart disease is demonstrable at autopsy in approximately 40% of patients. Many of these lesions are mild and HIV-related heart disease probably causes symptoms in fewer than 10%, and death in fewer than 2% of all patients with HIV infection. Heart disease is demonstrable by echocardiography in around 25% of patients with AIDS. Nevertheless, the sheer scale of the pandemic means that there are around 3 million people in the world living with HIV-related heart failure.

Delivering effective health care to these patients will be a huge challenge, but also provides an unrivalled opportunity to research in the pathophysiology of a wide range of cardiovascular diseases. Moreover there is a real and tantalizing prospect that studying these diseases will ultimately provide valuable insight into other forms of heart disease, particularly idiopathic dilated cardiomyopathy, primary pulmonary hypertension and even atherosclerosis. In the past few years disturbing reports have begun to accumulate about young, relatively healthy HIV positive men who have developed heart disease or suffered heart attacks. Researchers and health-care providers treating people with HIV are taking these reports seriously, and increasing attention has been devoted to cardiovascular disease at recent medical conferences. It remains to be determined whether these cardiovascular manifestations are attributable to HIV infection itself, to antiretroviral drug therapy, to a high prevalence among HIV positive people, of traditional risk factors that pose a danger for the population at large -- such as tobacco smoking, older age, male sex, and family history -- or to some other not-yet know. As our hospital is one of the biggest ART center and there are approximately 10622 HIV positive registered cases out of that 4313 pts. are on ART and 6309 are PRE ART pts.so we thought of conducting this study.

Aim and Objectives

- To study cardio vascular manifestations in HIV positive adult patients

*Corresponding author: Gayatri Gawade Maindad,
Department of Biochemistry, BVDUMC, Pune, India.

- To study prevalence of various cardiovascular abnormalities in same group of HIV positive adult patients.
- To correlate clinical and investigation findings in HIV positive adult patients with cardiovascular abnormalities.

MATERIAL AND METHODS

Study Setting: University Medical college, Tertiary Care Hospital.

Study design: Descriptive study.

Study duration: From January 2010 to July 2011.

Ethical committee: Research protocol was submitted to institutional ethics committee for scientific and ethical approval.

Detailed Research Plan

Study population

HIV positive, adult (age group 15-49) male and female patients attending ART OPD (Out Patient Department) and In Patient Department(IPD) were the study participants. Proper history was taken and clinical examination of 5000 participants was done. Out of these patients, 1000 cases who had history of cardiovascular disease and clinical manifestations of cardiovascular disease were included in present study with written consent. A detailed clinical profile including detailed history, general physical examination and systemic examination was done for each patient with special emphasis on cardiovascular system.

Line of investigation obtained for all the participants

- ECG, CHEST X-RAY, lipid profile and 2D-ECHO was done in all patients and
- CT BRAIN, COLOUR DOPPLER was done in relevant cases only.
- Routine investigations like HB/CBC/RFT was used only for primary evaluation.

All patients were evaluated for their CD4 count and were analyzed for different cardiac abnormalities. We used this information for study purpose only and not disclosed elsewhere.

Inclusion Criteria

HIV positive adult (age group 15-49) male and female patients, newly diagnosed and previously known cases of HIV considered who are diagnosed at VCTC center under ART department in our hospital.

Exclusion Criteria

In the present study by history and clinical finding following cases were excluded

- Congenital heart diseases
- Known case of valvular heart disease
- Known case of ischemic heart disease before VCTC report positive.

Statistical Analysis

Statistical analysis was done with Scientific Package for Social Sciences (SPSS) version 20.0 and MS Excel 2007 spreadsheet. Student's t test and χ^2 test, Pearson's correlation coefficient, were used for analysis.

P value <0.05 will be considered statistically significant.

RESULTS

In present study, most common symptom related to cardiovascular abnormalities in HIV patients was breathlessness (54%), followed by cough (52%), palpitation (50%), chest pain (30%), pedal edema (20%), fever (20%), altered sensorium (10%), one side weakness/focal neurological deficit (10%). Claudication and syncopal attacks each (3%). Most common presenting symptom was breathlessness. Claudication and syncopal attacks were very less. In present study, HIV positive patients with cardiovascular manifestation were most commonly found with sinus tachycardia (60%) on examination. Second most common sign was tachypnea (50%), 30% patient were having crepitations, hypertension was found in 25% patients. Orthopnea 22%, pedal edema 20%, hepatomegaly 20%, pericardial rub 14%, hypotension 13%, altered sensorium and hemiplegia /focal neurological deficit 10% each. Decreased pulsation and bradycardia seen less commonly in 3% patient only. Fever was found in 30% pts. Most common cardiac abnormality was drug-related cardiovascular toxicities. Systolic dysfunction, LV diastolic dysfunction, pericardial disease like pericardial effusion, constructive pericarditis, acute pericarditis, cardiac tamponade, dilated cardiomyopathy etc were the other common abnormalities found in HIV pts.

Conclusion

- Young age groups are most commonly affected by HIV/AIDS and their cardiovascular abnormalities.
- Cardiovascular system involvement is one of the most common causes for morbidity in HIV/AIDS pts.
- 2D ECHO, ECG, X-RAY, CT, COLOUR DOPPLER are essential investigation modalities needed for evaluation of this disorder.
- We found increase in cardiovascular abnormalities with low CD4 count and late stage disease (i.e. stage 3 and stage 4 according to WHO staging) in HIV pts.
- With opportunistic infections cardiovascular abnormalities increases indicated by increased ECG abnormalities.
- With treatment of HIV, opportunistic infections and cardiovascular system evaluation and cardiovascular abnormalities management is needed for longer life of HIV pts.
- Drug related cardiovascular toxicity occurs in number of HIV positive pts which needs to be monitored specially in case of young HIV pts which will help to extend the lifespan of the pts.
- Lipid abnormalities are commonly found in HIV pts. On HAART with PIs, HAART without PIs as compared to pts. not on HAART.

Conflict of Interest

Our team does not possess any conflict of interest to disclose.

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