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Acute Non–ST Elevation Myocardial Infarction in a Young Adult with Poorly Controlled HIV Infection: A Case Report from Timor-Leste in June 2026

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ABSTRACT

Background

Cardiovascular disease is increasingly recognized as an important complication among people living with HIV (PLWH). HIV infection is associated with accelerated atherosclerosis due to chronic immune activation, systemic inflammation, endothelial dysfunction, metabolic abnormalities, and prothrombotic changes with interruption of antiretroviral therapy (ART) may increase the risk of premature coronary artery disease (1,2). With the widespread availability of antiretroviral therapy (ART), PLWH have increased life expectancy; however, cardiovascular disease has emerged as an important cause of morbidity and mortality. Acute coronary syndrome (ACS) in young adults with HIV remains uncommon but carries significant morbidity and mortality.

Case Presentation

A 25-year-old male with known HIV infection presented with an 8-hour history of acute chest discomfort. The patient had a history of poor adherence to antiretroviral therapy and was considered to have uncontrolled HIV infection. Initial evaluation revealed electrocardiographic abnormalities with T-wave inversion suggestive of myocardial ischemia. Cardiac biomarkers were elevated, with troponin level of 1.6 (assay-dependent units), confirming myocardial injury. Echocardiography demonstrated regional wall motion abnormalities consistent with ischemic myocardial dysfunction. The patient was diagnosed with non–ST elevation myocardial infarction (NSTEMI) and admitted to the intensive cardiac care unit (ICCU). Despite appropriate acute management, the patient deteriorated rapidly and died several hours after admission.

Conclusion

This case highlights the occurrence of fatal NSTEMI in a very young patient with untreated HIV infection. Early cardiovascular risk assessment, optimization of ART adherence, and increased awareness of ACS among young PLWH are essential, particularly in low- and middle-income countries where access to advanced cardiac investigation and intervention may be limited such as Timor Leste.

Keywords: HIV infection, antiretroviral therapy non-adherence, acute coronary syndrome, NSTEMI, young adult, myocardial infarction, Timor-Leste.

INTRODUCTION

HIV infection is increasingly recognized as an independent risk factor for cardiovascular disease. Studies have demonstrated higher rates of acute myocardial infarction among HIV-positive individuals compared with HIV-negative populations, even after adjustment for traditional cardiovascular risk factors (2,3).

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The mechanisms contributing to cardiovascular disease in HIV include persistent viral-associated inflammation, immune activation, endothelial dysfunction, platelet activation, and accelerated coronary plaque formation (4). Interruption or poor adherence to ART may increase inflammatory activity and contribute to cardiovascular risk (5).

Acute myocardial infarction in young adults is uncommon, and NSTEMI occurring in a 25-year-old patient with poorly controlled HIV represents an important clinical challenge, particularly in low- and middle-income countries where access to coronary angiography and percutaneous coronary intervention may be limited.

Case Presentation

A 25-year-old male with confirmed HIV infection presented to the emergency department with an approximately 8-hour history of acute chest pain. The patient had a history of poor compliance with his first line ART (Dolutegravir/Tenofovir/Lamivudine) suggesting uncontrolled HIV infection. There was no documented history of previous cardiovascular disease.

Physical Examination on Admission

General appearance:

- Young adult male, critically ill-looking, anxious and distressed due to chest pain.
- Conscious but appeared pale and diaphoretic.
- No obvious peripheral cyanosis.

Vital signs:

- Blood pressure: 90⁄ 60mmHg
- Heart rate: 110 beats/min
- Respiratory rate: 28 breaths/min
- Oxygen saturation: 90 % on room air
- Temperature: 36.5°C

Cardiovascular examination:

- Peripheral pulses: weak but regular
- Capillary refill time: >2 seconds.
- Jugular venous pressure: not elevated/elevated.
- Apex beat: location and character.
- Heart sounds: S1 and S2 present.

Respiratory examination:

- Respiratory effort: normal/increased.
- Bilateral air entry present.
- Crepitations at lung bases

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- No wheeze.

Abdominal examination:

- Soft, non-tender abdomen.
- Liver: not enlarged
- No abdominal bruits.

Neurological examination:

- Conscious level: GCS 13/15.
- No focal neurological deficit initially (if applicable).

Extremities:

- No peripheral oedema.
- Hands and feet cold/clammy
- No signs of chronic vascular disease.

Investigation

Investigation	Result	Normal ranges
White blood cells	15.9X 10^9/L	3.5-11.0 x10^9/L
Neutrophils	80.1 %	50-70%
Hemoglobin	138.0 g/L	130-170 g/L
HCT	0.44 l/l	0.40-0.54 l/l
Platelets	312x10^9/L	150-410 X 10^9/L
Sodium	137.5 mmol/L	135-145 mmol/L
Potassium	5.6 mmol/L	3.5-5.2 mmol/L
Blood urea nitrogen	5.6 mmol/L	3.0-8.0 mmol/L
Creatinine	122.4 umol/L	60-100 umol/L
Random Blood Glucose	13.0 mmol/L	3.0-7.7 mmol/L
ALT	26 U/L	<35 U/L
AST	54 U/L	5-35 U/L
ALKP	67 U/L	30-100 U/L
GGT	26 U/L	9-64 U/L
Uric acid	413.2 umol/L	137-452 umol/L
eGFR	72.17	>90
Troponin I	1.6 ng/mL	0.00-0.02 ng/mL
HIV 1 test	Positive/ reactive	Negative/ non reacrtive
HiV 1 Viral load	140.000 copy/ml	-
CD4 counts	140 cells/uL	500-1500 cells/uL

Initial investigations showed:

- ECG: T-wave inversion suggestive of myocardial ischemia without ST-segment elevation.
- Cardiac biomarker: Troponin elevation (1.6 ng/mL), with marked elevated AST (54 U/L) confirming myocardial injury.

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- Echocardiography: Regional wall motion abnormalities consistent with ischemic myocardial dysfunction.

Based on symptoms, ECG findings, elevated cardiac enzymes, and echocardiographic abnormalities, the diagnosis of NSTEMI was established according to acute coronary syndrome criteria.

He was receiving treatment and care management

1. ECG monitoring

2. Given Oxygen 15 L/min through non rebreathing Mask (NRBM)

3. Sublingual glyceryl trinitrate (GTN) 300 microgram, (than hold because of hypotension)

4. Aspirin 300 mg loading, then 100 mg Oral daily

5.Clopidogrel 300 mg loading, then 75 mg oral Daily

6. Enoxaparin 40 mg SC 12 hourly

7. Simvastatin 20 mg oral nocte

8. Bisoprolol 2.5 mg oral daily (hold due to dropping oxygen saturation)

9. Morphin 2 mg IV Slowly PRN

10 Metoclopramide 10 mg IV PRN

The patient was transferred to the Intensive Cardiac Care Unit (ICCU) for monitoring and treatment. His Blood pressure was dropped to 64/33 mmHg and started norepinephrine 8mg/2ml in 100 ml normal saline at 12ml/hours but not responding, then he was double vasopressin with dobutamine 5 micrograms/kg/min up to 20 micrograms/kg/min. He has intubated after not responding to all the effort been done. Despite intensive management, the patient continued with rapid deterioration and died several hours after admission most likely from deterioration of ACS leading to arrhythmias and cardiogenic shock.

DISCUSSION

This case demonstrates a fatal cardiovascular event occurring at an unusually young age in a patient with untreated or poorly controlled HIV infection.

Several mechanisms may explain premature coronary events in PLWH. Chronic HIV-related inflammation promotes endothelial injury, oxidative stress, and vascular remodeling, accelerating coronary atherosclerosis (4). HIV infection is also associated with increased inflammatory markers and coagulation activation, which may contribute to plaque instability and acute coronary thrombosis (3,5).

The SMART study demonstrated that interruption of ART was associated with increased HIV-related complications and inflammatory activity, supporting the importance of continuous viral suppression (5). Maintaining effective ART may reduce immune activation and potentially lower cardiovascular risk.

The high mortality observed in this patient may reflect several factors, including delayed presentation, severe myocardial injury, absence of early coronary intervention facilities, and advanced uncontrolled HIV infection. Similar challenges are encountered in many low-resource healthcare systems, where cardiovascular disease among PLWH is an emerging concern.

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CONCLUSION

NSTEMI should be considered in young HIV-positive patients presenting with acute chest symptoms, particularly those with poor ART adherence. This case emphasizes the importance of integrated HIV and cardiovascular care, early recognition of ACS, and strengthening ART adherence programs in Timor-Leste and other resource-limited settings.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient(s) has/have given his/her/their consent for his/ her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest

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