Case Report

Atypical presentations and other challenges in the management of acute coronary syndrome in developing countries

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Abstract

Background: Acute coronary syndrome (ACS) is a medical emergency and its management must be optimal in all patients. The existing guidelines such as the American College of Cardiology/American Heart Association and the European Society of Cardiology do not capture the peculiar challenges such as the nature of patients, non-availability of required facilities and clinical skills in the management of the spectrum of ACS in many hospitals in low-resource countries.

Aim: The aim of this study is to report the challenges in the presentation and management of ACS in a developing country.

Case Report: A 75-year-old male, diabetic and hypertensive of 5-year duration with poor drug adherence, presented with a 5-day history of epigastric pain radiating to the back and was managed for gastritis by a close relative who is a retired paramedic. He subsequently developed dyspnoea with profuse diaphoresis a day to presentation to the tertiary hospital. Examination on presentation revealed an elderly male in respiratory distress, pale with cold extremities, pulse 152 bpm and thready and blood pressure was unrecordable. Electrocardiogram (ECG) showed extensive anterior wall myocardial infarction (MI) complicated by ventricular tachycardia (VT). The cardiac troponin I was 27.2 ng/l and troponin T was 54 ng/l. Random blood glucose was 24 mmol/l. A diagnosis of ST elevation MI with VT in cardiogenic shock was made. The patient had oxygen, aspirin, clopidogrel, insulin and serial ECG monitoring but no facilities for cardioversion and the patient died on the same day.

Conclusion: Management of ACS in developing countries has peculiar challenges such as atypical presentations, delayed presentation, paucity of facilities and delay in diagnosis and treatment. The hospitals should make ECG mandatory for adults presenting in the emergency rooms and improve on the existing facilities.

Keywords: Acute coronary syndrome management, atypical presentations, developing countries, other challenges

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INTRODUCTION

Chest pain has been reported as a cardinal clinical feature among patients with acute coronary syndrome (ACS).[1] However, some patients may present in an atypical manner while some others may even have no chest pain initially. Atypical symptom is defined as the absence of chest pain before or during admission and may include gastrointestinal

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or respiratory symptoms such as dyspnoea, nausea, vomiting and abdominal discomfort.[2]

Patients who present without chest pain are frequently misdiagnosed and less likely to receive optimal treatment for ACS. Consequently, greater in-hospital morbidity and mortality are noted.[3] Therefore, understanding the factors associated with atypical presentations may help in the early detection and treatment of ACS patients as this constitutes a challenge to cardiovascular medicine providers, especially in low-resource countries.

The aim of this article is to highlight the challenges in the presentation and management of ACS in a developing country.

CASE REPORT

A 75-year-old male, retired clerical officer, who was a known diabetic and hypertensive of 5-year duration with poor drug adherence, presented with a 5-day history of epigastric pain; insidious in onset, sharp, radiating to the back, constant and not worse at any time and not exacerbated or relieved by any factor. There was no association with meals. There was no history of anorexia, abdominal swelling, nausea, vomiting and no yellowness of the eyes. There was no history of haematochezia. The patient was not a known peptic ulcer disease (PUD) patient, not known to use non-steroidal anti-inflammatory drugs prior to the onset of illness.

At onset of symptoms, the patient received antacids amongst other peptic ulcer medications at home on prescription by a close family member who is a retired health-care provider without relief of symptoms. He subsequently developed dyspnoea with profuse diaphoresis on the 4th day of illness for which he presented to the hospital the following day. There was a positive history of hypertension in the patient's mother.

Examination on presentation revealed an elderly male, conscious, acutely ill looking, in respiratory distress, pale, anicteric and afebrile, with cold and clammy extremities. Cardiovascular system examination revealed a non-palpable peripheral pulse but heart rate of 152 bpm, non-recordable blood pressure, heaving precordium, displaced apex beat and 3rd heart sounds was also heard. Other systems were essentially normal.

Electrocardiogram (ECG) done showed extensive anterior wall myocardial infarction (MI) complicated by ventricular tachycardia (VT) [Figure 1]. The cardiac troponin I was 27.2 ng/l and troponin T was 54 ng/l. RBS at presentation was 24 mmol/l. A diagnosis of ST elevation MI (STEMI) with VT in cardiogenic shock was made. The patient was nursed in the intensive care unit and received supplemental oxygen, intravenous fluid, aspirin, clopidogrel, low molecular weight heparin, insulin, and serial ECG monitoring was commenced. Cardioversion was not effective and the patient went into ventricular fibrillation and died on the same day despite prompt cardiopulmonary resuscitation instituted in conjunction with the anaesthetist.

DISCUSSION

The prevalence of atypical presentation of ACS was 8.4% as reported in the Global Registry of Acute Coronary Events (GRACE),[4] 33% in the National Registry of Myocardial Infarction-2 (NRMI-2),[5] and the dominant symptoms in these patients as reported were dyspnoea, nausea, syncope and epigastric pain. Our patient presented with similar symptoms. In NRMI-2 report, patients with atypical presentations had a longer delay before seeking hospital care.[5] This also applied in our index patient who presented 5 days after the onset of symptoms and was assumed to have PUD. This perception is a major limitation to the early presentation of ACS patients. Patients with atypical presentation are less likely to be diagnosed with a MI early and also less likely to be offered optimal medical therapy (using aspirin, β-blocker and heparin) and to receive thrombolytic therapy or primary percutaneous coronary intervention.[5] The delay in our patient's presentation constituted a contraindication for the use of thrombolytic agents which further worsened the outcome.

In-hospital mortality rates were much higher in patients with atypical presentation compared to those with typical presentation in both NRMI-2 (23% vs. 9%)[5] and GRACE (13% vs. 4%) registries.[5] The poor outcome in this patient may be attributed to his late presentation and complications as has been reported that patients with atypical presentations tend to have more out- and in-patient complications.[6]

Risk factors for atypical presentation in NRMI-2 registry include variables such as older age, male gender, race and comorbidities (diabetes, stroke and heart failure).[5] Our index patient was an elderly male with hypertension and diabetes which are the major risk variables identified for atypical presentations.

The nature of patients (level of education, perception of illness, cultural background and belief system), relatives, traditional healers and interaction with paramedics such as nurses and pharmacists influence the choice and time of presentation and the health-seeking behaviour.[7-9] In our index case, home remedy influenced the choice and time of his presentation, thereby causing a delay and affecting the overall outcome negatively. These peculiarities are

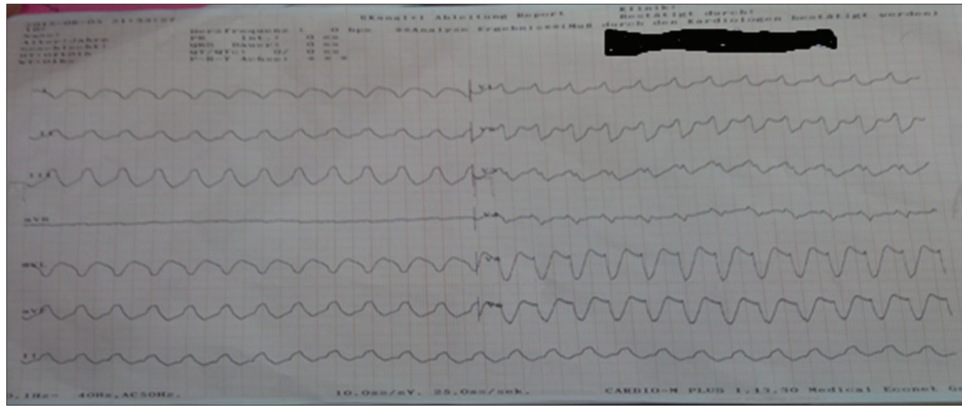

Figure 1: Anterior wall myocardial infarction complicated by ventricular tachycardia

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not captured and emphasised in Western guidelines such as the American College of Cardiology/American Heart Association and European Society of Cardiology guidelines for the treatment of ACS. The existing reports from Nigeria and other parts of sub-Saharan Africa suggest the rarity of ACSs, and the presentations were mainly typical.[10-12]

In developing countries, non-availability of essential medical equipment and emergency drugs is a peculiar factor that influences patients' health outcome. This is partly as a result of perceived low prevalence of coronary artery disease among the populace and poor level of preparedness. In our index case, materials for cardioversion were not readily available.

CONCLUSION

Management of ACS in developing countries has peculiar challenges such as late presentations, delay in diagnosis, undue family and socio-cultural influence, home remedies and paucity of facilities which contribute to underdiagnosis and treatment. This calls for proper patient education and enlightenment, mandatory provision and use of ECG for adults presenting to the emergency rooms, especially those with known cardiovascular risk factors and improvement on the existing cardiac emergency care facilities. There is also an urgent need for total support for the ongoing Registry of Acute Coronary Events in Nigeria.

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Conflicts of interest
There are no conflicts of interest.

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