



# Successful Management of Acute ST-Elevation Myocardial Infarction Complicated by Ventricular Fibrillation and Acute Kidney Injury

Dr. Tanaji Dnyanoba Lakal

Date of Submission: 25-07-2023

Date of Acceptance: 05-08-2023

## ABSTRACT:

We present a case report of a 65-year-old male who was admitted with acute chest pain, sweating, and transient loss of consciousness. Upon examination, the patient was conscious and oriented, with a pulse rate of 84/min and blood pressure of 130/80 mmHg. An electrocardiogram (ECG) revealed ST-elevated anterior wall myocardial infarction (MI). Thrombolytic therapy with injection streptokinase was initiated, but the patient rapidly deteriorated, experiencing ventricular fibrillation. Aggressive resuscitative efforts, including multiple DC shocks, antiarrhythmic medications, and one hour of cardiopulmonary resuscitation (CPR), were required to restore sinus rhythm. After 3 days of intubation and ventilatory support, the patient regained consciousness, but developed oliguria and acute kidney injury (AKI). Conservative management was employed for the AKI, and the patient was successfully weaned off ventilatory support after 7 days. Coronary angiography revealed recanalized coronary arteries, and the patient was discharged home after 15 days.

## I. INTRODUCTION:

Acute ST-elevation myocardial infarction (STEMI) is a medical emergency that requires prompt intervention to reduce morbidity and mortality. However, thrombolytic therapy carries its own risks, including the potential for life-threatening arrhythmias. We present a case highlighting the challenges and successful management of STEMI complicated by ventricular fibrillation and subsequent acute kidney injury.

## II. CASE PRESENTATION:

A 65-year-old male presented with chest pain, sweating, and transient loss of consciousness lasting approximately 2 hours. On admission, he was conscious, oriented, and hemodynamically stable with a pulse rate of 84/min and blood pressure of 130/80 mmHg. An ECG demonstrated ST-segment elevation in the anterior wall leads, confirming the diagnosis of STEMI.

## III. TREATMENT AND PROGRESSION:

Thrombolytic therapy using injection streptokinase was initiated promptly. However, within minutes, the patient became unconscious, and pulse and blood pressure were not recordable. ECG monitoring revealed ventricular fibrillation. Aggressive interventions, including intubation, ventilatory support, repeated DC shocks, and administration of antiarrhythmic medications like lidocaine, were undertaken. After one hour of CPR, the patient's ECG reverted to sinus rhythm, but his blood pressure remained unrecordable.

The patient continued to require inotropic support for hemodynamic stability. After 3 days, he regained consciousness, but oliguria and AKI were observed. Conservative management was implemented to address the AKI, resulting in gradual improvement. After 7 days, the patient was successfully weaned off ventilatory support.

Coronary angiography was performed, demonstrating recanalized coronary arteries. Subsequently, the patient's condition stabilized, and he was discharged home after 15 days of hospitalization.

## IV. DISCUSSION:

This case highlights the complexities in managing acute STEMI complicated by ventricular fibrillation and subsequent AKI. Thrombolytic therapy, though life-saving in myocardial infarction, can be associated with serious arrhythmias. Timely resuscitation and aggressive management played a crucial role in the successful restoration of sinus rhythm. Conservative management of AKI proved effective in avoiding the need for renal replacement therapy.

## V. CONCLUSION:

This case report illustrates successful management of an elderly patient with acute STEMI complicated by ventricular fibrillation and AKI. Prompt recognition and appropriate interventions, including thrombolytic therapy and aggressive resuscitation, are crucial in achieving favorable outcomes in such cases. Conservative



management of AKI can be effective, given the absence of irreversible renal damage. Further studies are warranted to explore optimal strategies for managing STEMI patients at high risk of thrombolytic complications and associated organ injuries.