

# Inferior Wall Myocardial Infarction, Acute Coronary Syndrome, Double-vessel Diseases, Chronic Venous Thrombosis, and Type II Diabetes Mellitus

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## ABSTRACT

Inferior wall myocardial infarction (IWMI), acute coronary syndrome (ACS), and double-vessel diseases constitute clinical syndromes which are caused by hypertension and diabetes mellitus (DM). Atherosclerotic coronary artery disease is associated with an increased incidence of myocardial infarction. Patients presenting with IWMI and ACS have a high likelihood of coronary thrombus causing a complete occlusion of the artery more than 90%. In the last several years, there has been an unprecedented focus on quantifying and improving healthcare delivery.<sup>1-6</sup>

**Keywords:** Acute coronary syndrome, Chronic venous thrombosis and type II diabetes mellitus, Double-vessel diseases, Inferior wall myocardial infarction.

*Pondicherry Journal of Nursing* (2020): 10.5005/jp-journals-10084-12147

## INTRODUCTION

An inferior wall myocardial infarction also known as IWMI or inferior MI, or inferior ST segment elevation MI or inferior STEMI, occurs when the inferior myocardial tissue supplied by the right coronary artery, or RCA, is injured due to thrombosis of those vessels.<sup>7,8</sup> When an inferior MI extends to posterior regions as well, an associated posterior wall MI may occur. An inferior MI can have multiple potential complications and can be fatal.<sup>9-13</sup>

## CASE DESCRIPTION

A 37-year-old patient, a diabetic and normotensive, came to medical intensive care unit (MICU) in an unresponsive state. She was resuscitated and CPR was started as per ACLS protocol. The monitor showed a systole which then generated into VT. The DC cardioversion was given and then VT was reverted. The patient attenders informed that she had sudden onset angina and dyspnea for the last 3 hours. She was also treated as cortical venous thrombosis in the year 2005. She also underwent fasciotomy in 2015. Her ECG showed acute PWMI with old IMWI. Her echo showed severe LV systolic dysfunction with global hypokinesia of LV with subtle RWMA. She improved after medications and taken up for coronary angiography (CAG). Her CAG showed double-vessel disease (CTO of RCA and acute occlusion of LCX). She was advised medical management in view of her hypercoagulable state. Her medications were optimized, and she was explained in details the need of medicine and risk/benefits. After the discharge, the continuity of care was provided through mobile health care service.

## Examination

On the time of care initiated at home through mobile health care, on the first-day home visit, head to foot physical examination including urine analysis was done. The results were revealed that body build is moderately gained weight, swelling, tenderness, warmth, distended veins, and the presence of open wound with continuous discharge. The urine analysis showed that ++ urine sugar level, blood glucose level was 202 mg/dL, urine albumin is

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**How to cite this article:** Bamalakshmi J. Inferior Wall Myocardial Infarction, Acute Coronary Syndrome, Double-vessel Diseases, Chronic Venous Thrombosis, and Type II Diabetes Mellitus. *Pon J Nurs* 2020;13(3):64-65.

**Source of support:** Nil

**Conflict of interest:** None

nil, blood pressure is 170/90 mm Hg, and CVS-S<sub>1</sub> S<sub>2</sub> revealed normal no murmur.

## Investigation

### Blood Examination

Hemoglobin (Hb)—10.8 g/dL, WBC—11,000 cells/mm<sup>3</sup>, erythrocyte—90 mm/hour, RBC—96 mg/dL, Platelets—4.6 lakhs.

### ECG

NSR, ST<sub>1</sub>, T<sub>1</sub>, V<sub>1</sub>-V<sub>6</sub>

### ECHO

CAD-RWMA (+) (inferoseptal hypokinesia), mild concentric LVH, mild LV systolic dysfunction; EF = 45%, grade I diastolic dysfunction, mild MR, mild TR; PASO:32 mm Hg, no clot, no PE.

### Peripheral Angiogram

Left main is normal, LAD: type II vessel and normal, LCX: non-dominant system and totally occluded filling through, OM2: seen faintly through anterograde injection, RCA: dominant system proximal RCA is totally occluded, PDA and PLE are seen filling through hetero- and homocollaterals, and RCA is diffusely diseased, RV branch is diffusely diseased,

### Impression on Peripheral Angiogram

Coronary artery disease, double-vessel disease (chronic total occlusion of RCA and complete occlusion of LCX), and moderate systolic dysfunction.

### Treatment

The patient underwent the medical treatment. She received some of the drugs such as Tab. Plavix 75 mg OD, Tab. Ecosprin 150 mg OD, Tab. Acitrom 2 mg/3 mg on alternative days OD, Tab. Tonact 80 mg OD, Tab. Envas 2.5 mg BD, Tab. K-ion 5 mg BD, Tab. Ivabid 5 mg BD, Tab. Pantacid 40 mg BD, and Syp. Sucralfate S/L SOS. As per the order, the patient must visit cardiac OPD once in every month.

As part of nursing management at home physical examination including peripheral blood investigation for Hb and blood glucose and urine, the analysis of urine sugar and albumin was done every 5 days once. The general examination was done every day. Daily sterile dressing on open wound in both the legs was also done. The health education regarding diet about avoiding green leafy vegetables and cabbage for INR control was followed. The health advice was given regular follow-up as well as in case of any bleeding, weakness of any limbs, loss of consciousness, and importance of regular continuity of drug therapy. The outcome of home care through mobile health care service gives better improvement on wound and was continuously monitoring, and the patient and her family members were feeling better on the patient condition.

### Follow-up

The patient was instructed on the follow-up care including frequent visit in cardiac unit once in every month and ECHO and peripheral angiogram in every 6 month once. The patient was advised to follow regular health visit, and the prognosis was getting betterment.

### DISCUSSION

Inferior wall myocardial infarction, ACS, and double-vessel disease encompass the clinical entities of myocardial ischemia and myocardial infarction. The diagnosis of cardiovascular diseases is based on the history, risk factors, invasive and noninvasive cardiovascular investigation helps in predicting the path physiologic events of ischemic, infarction, thrombosis of blood vessels, and injury of myocardial muscles. This major cardiac disease leads the diminished oxygen supply, increased metabolic demand, angina pectoris and heart failure.<sup>14-16</sup>

### CONCLUSION

This case has been presented very rare. Detailed history and investigations proved the disease progression, and initially, the treatment was started appropriately which results in good prognosis. The systematic care will be required for the patients to maintain the health from risk due to known cases of IWMI, ACS and double-vessel disease, hypertension (HT), and type II DM. Each and every patient was encouraged for a follow-up care which helped the patient to maintain the blood glucose level 150 mg/dL and blood pressure 140/80 mm Hg but they required daily dressing procedure on the leg so we are providing regular dressing and monitoring general health condition through mobile health care service.

### DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for

her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal the identity, but anonymity cannot be guaranteed.

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