

## Winter is coming. De Winter Pattern

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### ABSTRACT

The De Winters electrocardiographic pattern, which is present in only 2% of cases of acute myocardial infarction, is an electrocardiographic pattern with a high risk of complications since acute occlusion of the anterior descending artery must be considered. Early recognition and appropriate therapy are what improve the prognosis in this patients.

**KEYWORDS:** De winters, EKG, Acute coronary syndrom.

### ARTICLE DETAILS

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### INTRODUCTION

Acute coronary syndromes are a significant cause of morbidity and mortality. Early diagnosis plays a central role in allowing for a timely reperfusion strategy.<sup>1</sup>

The electrocardiogram (ECG) is central to the diagnostic process and treatment plan, as early diagnosis allows for a timely reperfusion strategy. Though differentiation between ST-segment elevation myocardial infarction (STEMI) and non-ST-segment elevation myocardial infarction (NSTEMI) is pivotal, over the years, several electrocardiographic patterns associated with an increased risk of cardiovascular (CV) events have been described.<sup>2, 3, 4, 5, 6</sup>

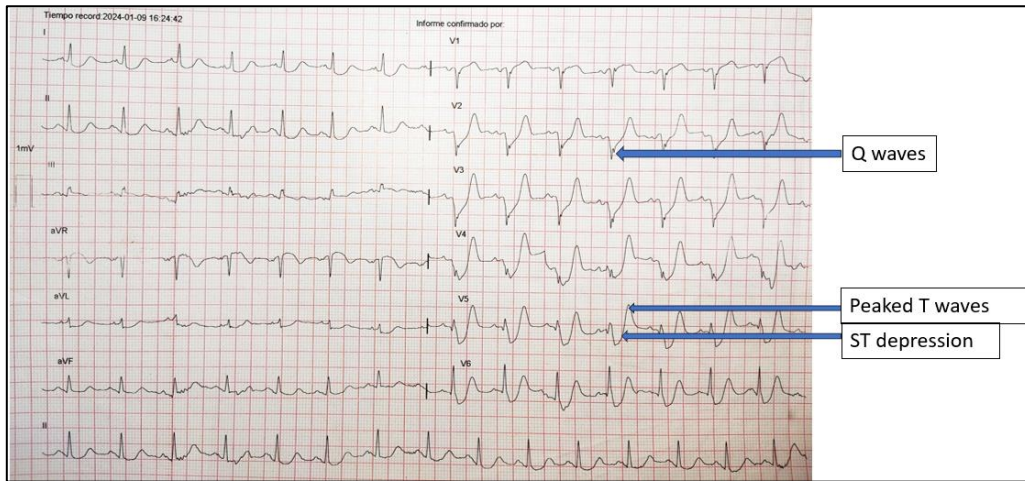
The de Winter electrocardiogram pattern is a finding that, in the proper setting, is highly suggestive of an acute occlusion of the left anterior descending artery. This electrocardiographic finding consists of an upsloping ST-segment depression at the J point from 1 to 3 mm in leads V1 to V6 that continues into a tall positive symmetrical T wave. The pattern is considered to be equivalent to an ST segment elevation as a clinical indication of myocardial infarction.<sup>1</sup> The de Winter electrocardiogram pattern is not a frequent

finding and is reported to occur in only 2% to 3.4% of patients with anterior myocardial infarction.<sup>1</sup>

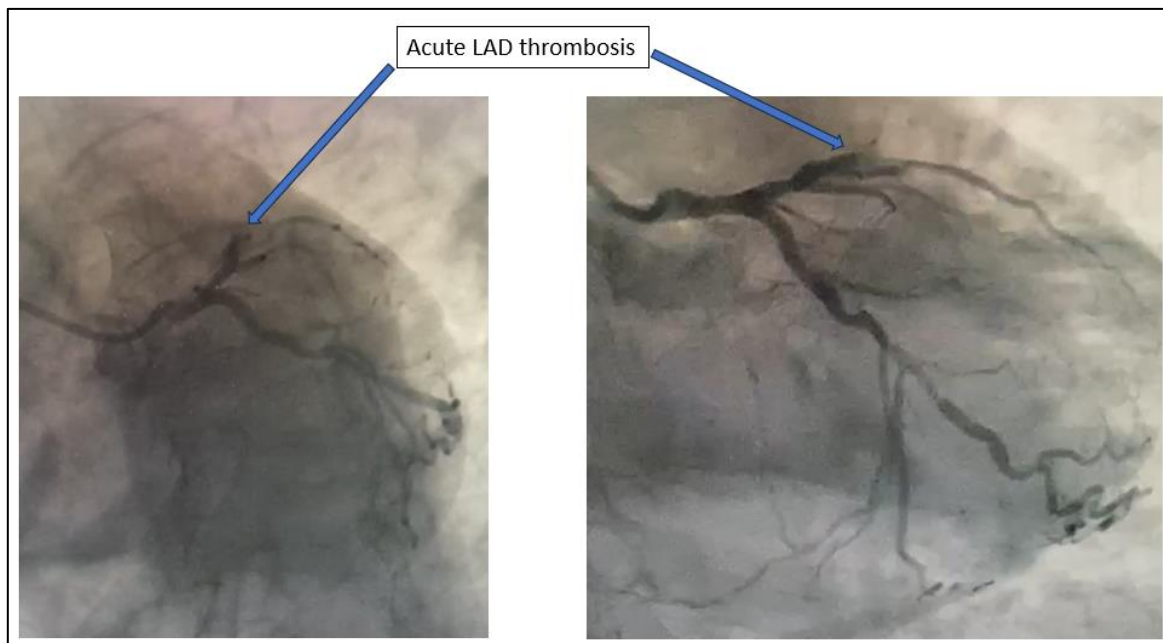
### CASE REPORT

A 68-year-old patient with a history of diabetes and COPD was admitted to the emergency department with dyspnea and chest discomfort. Upon admission, the patient had tachycardia and tachypnea. Upon physical examination, rales were noted bilaterally in the base of both lungs; an electrocardiogram was requested, in which no ST segment elevation was observed, instead an ST segment depression was observed in the frontal plane from V3 to V6, with tall positive symmetrical T waves from V2 to V6 and Q waves from V1 to V5 (Image 1). These findings were consistent with the high-risk De Winter pattern in the clinical context of the patient and considered highly suspicious of an acute occlusion of the anterior descending artery. Emergency coronary angiography (Image 2) was performed, finding an acute thrombotic occlusion of the LAD (Left anterior descending artery). Subsequently, primary angioplasty was conducted with the final angiographic result shown in Image 3.

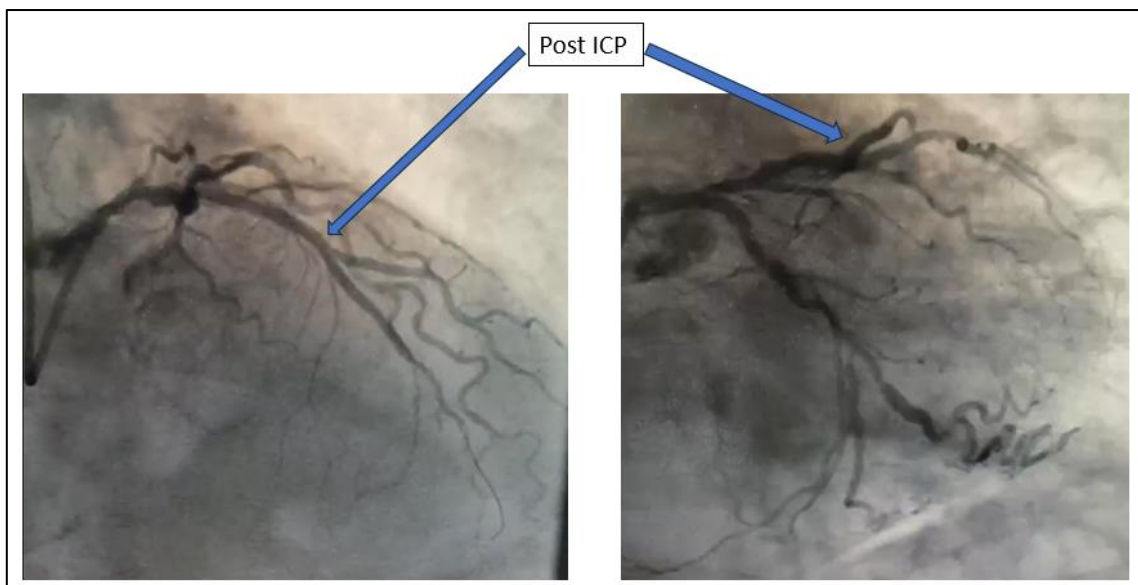
**Winter is coming. De Winter pattern**



**Image 1: EKG, De Winter pattern, ST segment depression from V3 to V6, with tall symmetrical T waves from V2 to V6, and the presence of Q waves from V1 to V5**



**Image 2: acute thrombotic occlusion of the LAD**



**Image 3: Final Angiographic results**

## DISCUSSION

This patient who presented to the emergency department without angina but with dyspnea, likely attributable to his comorbidities, and with the electrocardiographic De Winter pattern was found to have an acute thrombotic occlusion of the LAD coronary artery; therefore, reperfusion therapy was of paramount importance in the adequate management and positive outcome of this case.

## CONCLUSION

An early diagnosis plays a vital role in the management of individuals with ACS. The early identification of high-risk electrocardiographic patterns is crucial for the patient's prognosis, and in avoiding adverse clinical outcomes associated with acute Left Anterior Descending artery occlusion by reducing total ischemic time.<sup>2,4</sup>

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