**HYPERACUTE T-WAVES INDICATIVE OF MYOCARDIAL ISCHEMIA: AN ATYPICAL AND UNDER RECOGNIZED MUST-KNOW PATTERN ON ELECTROCARDIOGRAM**

**K.A. Samtani**, O.M. Ali

Wright State University, Dayton, OH, USA

*Introduction*: This case highlights an uncommon pattern on electrocardiogram (ECG) indicative of a common and life threatening problem, myocardial ischemia. De Winter’s T-wave pattern has been described as persistent tall, prominent T-waves in precordial leads without ST segment elevation, suggestive of left anterior descending artery occlusion. Case *Report*: A 54-yo-male presented to the emergency department with acute chest pain and hyperacute, tall, prominent, T-waves on ECG. Healthcare providers recognized ECG findings as de Winter’s pattern and sent him for emergent left heart catheterization. He was found to have severe proximal/mid left anterior descending artery disease and severe proximal right coronary artery disease.

*Discussion*: De Winter’s T-wave pattern was first described in 2008 by R.J. de Winter et al. They highlight this ECG pattern does not consist of the typical ST segment elevations but rather hyperacute T-waves in precordial leads. This pattern was identified in 30 of 1532 (2.0%) patients with anterior myocardial infarction. In 2009 Verouden et al. described patients with acute occlusion of the proximal left anterior descending artery and absence of ST segment elevation on ECG. De Winter’s T-wave pattern was identified in 35 of 1890 (2.0%) patients who underwent primary percutaneous coronary intervention of the left anterior descending artery. The electrophysiology behind de Winter’s T-wave pattern has yet to be fully understood. It is theorized the presence of collateral circulation or anatomical variants with delays in conduction could be responsible. An alternate explanation might be myocardial ischemia leading to depletion of adenosine triphosphate and subsequent lack of activation of potassium channels in the sarcolemma. Future studies are required to understand de Winter’s T-wave pattern. It is clear this pattern should be recognized by all healthcare providers who interpret ECGs as a representation of left anterior descending artery occlusion causing myocardial ischemia requiring immediate reperfusion therapy.