

Pathophysiological Similarities of Kounis Syndrome and Non-Allergic Acute Coronary Syndrome

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ABSTRACT

Kounis syndrome, defined as the occurrence of an acute coronary syndrome associated with mast cell and platelet activation in the setting of allergic or anaphylactic reactions, has three types: coronary vasospasm (type I, allergic angina), native plaque destabilization (type II, allergic myocardial infarction) and stent thrombosis (type III). Kounis Nicholas hypothesized that Kounis syndrome represents a magnificent natural paradigm and nature's own experiment in a final trigger pathway implicated in cases of coronary artery spasm and plaque rupture. The same mediators released from the same inflammatory cells are also present and in acute coronary events of non-allergic etiology, which are not only present in the culprit region before plaque erosion or rupture but they release their contents just before an actual coronary event. Increased histamine levels, increased serum tryptase and chymase levels, increased levels of arachidonic acid products (including thromboxane and leukotrienes), and increased interleukin-6 levels, were also found in patients suffering from non allergic acute coronary syndrome. Treatment of allergic event alone (intravenous corticosteroids, H1 and H2 antihistamines) can abolish symptoms in type I Kounis syndrome. In patients with allergic myocardial infarction (type II) treatment consists of an acute coronary event protocol and anti-allergy protocol (corticosteroids, antihistamines). In type III Kounis syndrome, treatment consists of an acute myocardial infarction protocol, urgent aspiration of intra-stent thrombus and anti-allergy protocol. Taking into account that there is a common pathophysiological pathway in allergic and non-allergic acute coronary syndrome, anti-allergy protocol, especially intravenous corticosteroids, could be beneficial in the treatment of non-allergic acute coronary syndrome as well. Early implementation of such protocol could prevent or mitigate myocardial damage, but more preclinical and clinical research is mandatory.

Keywords: Kounis syndrome, Allergic angina, Acute coronary syndrome, Corticosteroids, Pathophysiology

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