

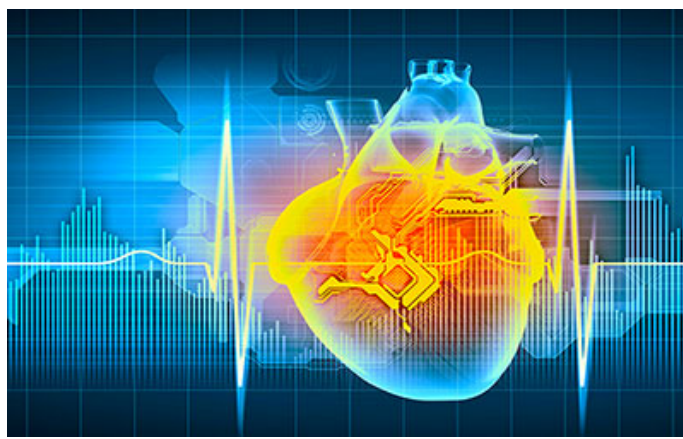
Dipartimento di Biotecnologie e Bioscienze – UNIMIB

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The mechanisms of potassium loss in acute myocardial ischemia: Insights from computational simulations

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Abstract: Acute myocardial ischemia induces hyperkalemia, a major perpetrator of reentrant ventricular arrhythmias. Despite considerable experimental efforts to explain this pathology, the mechanisms behind hyperkalemia remain partially unknown. We developed a novel computational model of acute myocardial ischemia that couples an electrophysiologically detailed human cardiomyocyte model accounting for ischemia induced changes in transmembrane currents, with a model of cardiac tissue and extracellular K^+ transport. The model reproduces and explain the triphasic time course of extracellular K^+ concentration within the ischemic zone, and the formation of a $[K^+]_o$ border zone after the onset of ischemia

Host: Antonio Zaza, Francesco Lodola

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