

Novel Electrolyte Formulation to Enhance Cardiac Function

VTIP 18-022: “Electrolyte Solution to Enhance Electromechanical Function”

THE CHALLENGE

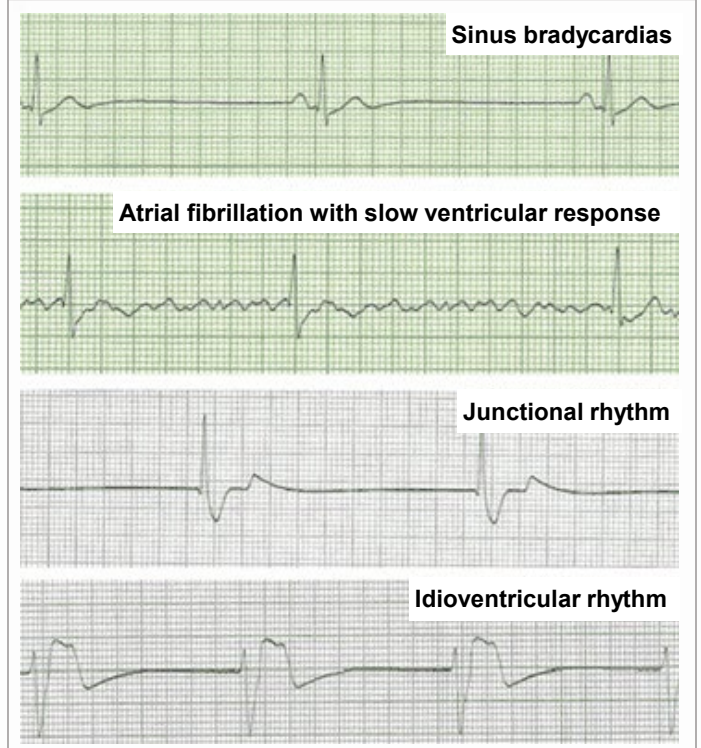
There are over 350,000 out-of-hospital cardiac arrests each year, with each patient seen by EMS receiving a liter of crystalloid solution (usually 0.9% saline). Only about two thirds of those patients have a pulse return; the remainder die from the condition called pulseless electrical activity (PEA) or electromechanical disassociation. PEA can potentially be treated by addressing an underlying condition, but it is speculated that PEA is more common in hospitalized patients, exposing a serious and sometimes untreatable condition.

OUR SOLUTION

Steven Poelzing his team at Virginia Tech have developed a fluid composition that can be administered by paramedics or hospital workers during resuscitation or after the diagnosis of PEA as a replacement for the commonly used 0.9% saline solution. This new, patented solution enhances cardiac mechanical function and can restore contractions faster than currently available solutions including Lactated Ringers or Normosol. The fluid can also be used as an adjuvant for inotropic compounds like epinephrine to further enhance cardia contraction.



(Photo from WXFRtv.com.)



Dysrhythmias most frequently seen in PEA include idioventricular, junctional, and sinus bradycardias. (Image from Consultant360.com.)



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