

***Mechanisms and Clinical Impact of Myocardial Injury Following Traumatic Brain Injury***

**Vijay Krishnamoorthy, MD, PhD**

**Duke University**

**MRTG-CT**

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Traumatic brain injury (TBI) is a major public health concern, affecting more than 1.7 million individuals annually in the United States. Hypotension after TBI is common and results in reduced cerebral perfusion and poor clinical outcomes; hypotension may be caused by unrecognized myocardial injury and cardiac dysfunction. Sympathetic activation is implicated in myocardial injury after TBI, but mechanistic data is limited. The central hypothesis of the current project is that TBI causes myocardial injury through activation of the sympathetic nervous system, and this results in cardiac dysfunction, hypotension, decreased cerebral perfusion, and poor neurologic outcomes. Results of this study will lead to a larger trial that examines the impact of reduction of sympathetic nervous system activation on myocardial injury and neurologic outcomes after moderate-severe TBI. The long-term goal of this project is to help personalize hemodynamic management and improve clinical outcomes after TBI.