Chest Compressions Should Be Performed on Arresting Patients with Left Ventricular Assist Devices (LVAD)

Zachary Shinar1; Marcia Stahovich2; Sheldon Cheskes3; Joseph Bellezzo2; Walter Dembitsky2
1 Emergency Medicine, Sharp Memorial Hosp, San Diego, CA
2 Sharp Memorial Hosp, San Diego, CA
3 Univ of Toronto, Toronto, Canada

Introduction: Patients with implanted Left ventricular assist devices (LVAD) are being assessed by an increasing number of health care providers. Despite a lack of evidence, many emergency medical systems and hospitals have discouraged providers from performing chest compressions in these patients when they present in cardiac arrest. This deviation from conventional resuscitation algorithms is secondary to concern that chest compressions could dislodge the LVAD.

Objective: To determine the rate of cannula dislodgment for patients presenting in cardiac arrest with known implanted LVAD devices receiving standard chest compression cardiopulmonary resuscitation.

Methods: We retrospectively analyzed the outcomes of all patients who received chest compressions for cardiac arrest over a 4 year period in a large urban hospital. Eight cases were reviewed for both cannula integrity and outcomes.

Results: Using autopsy and adequate flow through device as proxy for intact inflow/outflow cannulas, none of the eight patients receiving chest compressions had cannula dislodgment. Four of the 8 patients had return of neurologic function. Two additional patients had return of effective circulation without return of neurologic function. One patient had documented flow on the device without return of native heart function. The final patient did not have documented flow during resuscitation but autopsy showed no dislodgment.

Conclusions: In this small retrospective study, standard chest compressions in patients with LVADs appear to be safe, without evidence of cannula dislodgment. Standard chest compressions for LVAD patients in circulatory arrest should be performed.