**USE OF MECHANICAL CIRCULATORY SUPPORT IN OCTOGENARIANS FOR PERCUTANEOUS CORONARY INTERVENTIONS**

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*Background*: Mechanical circulatory support (MCS) is commonly used in the setting of high-risk percutaneous coronary intervention (PCI). However the effectiveness, safety, and trends of use of this modality in highly vulnerable octogenarians have not been well studied.

*Methods:* Using the Nationwide Inpatient Sample (NIS) database, we estimated the rates and trends of MCS devices for PCI in octogenarians and their inpatient mortality rates.

*Results*: From 2003- 2011 a total of 812,338 patients age >80 years underwent PCI of which 17,790 (2.2%) were performed with the support of MCS and the mean age increased from 83.7±3.4 to 84.5±3.8 years between 2003 and 2011 (p< 0.001). 50.6% were male and 84.4% were white. 53.3% were admitted with a primary diagnosis of STEMI, and 26.8% with NSTEMI. 51.6% of had cardiogenic shock. Intra-aortic balloon pump (IABP) was used in 96.1%; a peripheral ventricular assist device (PVAD) was employed in 3.9%. The proportion of MCS supported PCI in octogenarians increased from 1.5% in 2003 to 3.6% in 2011 (odds ratio (OR) 1.055, p<0.001). 9.7% of the PCIs among octagenarians in which MCS was employed over the study period were elective; there was no significant change in the proportion of such admissions over the study period (p=0.46). The in-hospital mortality rate among octogenarians with MCS use during PCI was 35.5%, with a downward trend for in-hospital mortality over the years of study (OR 0.96; p<0.001. In subgroup analysis, the mortality rates were 42% for STEMI patients, 28.5% for NSTEMI patients, and 48.7% for patients with cardiogenic shock, each of these subgroups exhibited a significant trend for decrease in in-hospital mortality over the study period (p<0.001 for all).

*Conclusion*: Mechanical support devices are increasingly employed in high-risk PCI in octogenarians, and there is a downward trend in mortality in recent years.