OUTCOMES IN ICU PATIENTS WITH SEIZURES POST CARDIAC SURGERY
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Introduction: Seizures occur in patients following cardiac surgery in the ICU. There is minimal descriptive data outlining the implications of seizures on overall outcome. We sought to provide a descriptive analysis of the intermediate outcomes in patients with seizures post cardiac surgery.

Methods: A retrospective chart review was conducted of all patients that had seizure following cardiac surgery at a single institution from April 2003 to Jan 2010. In addition to recording in-hospital outcomes, patients were followed post discharge via telephone interview. Local HREB approval was obtained. Informed consent was obtained for the telephone interview.

Results: Seizures occurred in 56 of 5958 (0.94%) cardiac surgery ICU patients with 35% of the seizing patients being females. Patients were mean (SD) 70.9 (11.6) years old, with an APACHE score of 20.8 (7.1) and had a cardiopulmonary bypass time of 156.5 (79.7) min. Preop neurological disease was present in 29%, preop cardiac arrest in 6%, preop renal dysfunction in 20% and preop peripheral vascular disease in 26%. Seventy-one percent had open heart procedures and 12% had previous cardiac surgery. The time to first seizure was -median (IQR) - 4.5 (2.3 – 9.2) hours after end of surgery with 60% having grand mal seizure; 64% having recurrent seizure within 24 hours of first seizure, and 49% having recurrent seizure during hospital stay. Most seizures lasted minutes however 4 patients (females, mean age 78 years, mean APACHE score 26.5, all having had aortic valve or other aortic surgery) demonstrated nonconvulsive status epilepticus confirmed via EEG. CT head demonstrated old or new stroke in 45% of all patients. ICU length of stay was 4.7 (2.0 – 7.8) days with ICU mortality 7%. Hospital length of stay was 15.0 (10.0 – 33.0) days with hospital mortality 20%. Follow up was available on 70% of patients with a median follow up of 16 (9 – 29) months. No patient experienced a seizure after discharge from hospital; at the median follow-up period, only 30% continued on anticonvulsant therapy. Stroke after discharge occurred in 5% of patients. Thirty-six percent of patients were unable to drive post op due to restrictions secondary to seizure.

Discussion: Seizure following cardiac surgery is relatively uncommon but when they occur, they are associated with long ICU and hospital length of stay, as well as high ICU and in-hospital mortality.