

Cardiac Catheterization In The Immediate Postoperative Period: Do Results from Center of Excellence Apply to the Real World

Background: Cardiac catheterization performed in the immediate postoperative period (< 6 weeks) is a high risk procedure. The published data is limited and exclusively from high volume centers.

Objective: The goal of this study was to compare the real world outcomes for early postoperative catheterization with published data from larger centers.

Methods: In this retrospective study previously published definitions, outcome measures, inclusion and exclusion criteria were chosen. All patients undergoing unplanned postoperative cardiac catheterization excluding central line placement, pericardiocentesis, post-transplant surveillance biopsies, and fluoroscopy only procedures between November 2007 and May 2015 were analyzed. The primary outcome measured was whether there was a change in management; transcatheter intervention, unplanned reoperation, or change in medical treatment. The secondary outcomes measured were death, cerebrovascular accident, major adverse event, need for emergent surgical bailout or mechanical support, worsening or new onset acute kidney injury. All decisions were made after multidisciplinary discussion. The data is expressed as median with IQR.

Results: Eighty-eight patients, median age 117 days (36 to 209.5 days), weight 4.5 kg (3.52 to 6.63 kg), underwent 134 catheterizations on median postoperative day 21.5 (8 to 41 days). Sixty (45%) procedures were performed in patients with single ventricle physiology. In 107 (80%) procedures there was a change in clinical management. Fifty-two (39%) procedures were interventional and 82 (61%) were diagnostic. Fourteen (10%) procedures were performed on ECMO. Success rates by procedure were: angioplasty 55 %, stent implantation 100 %, and occlusion 100 %. SAE during cardiac catheterization included thrombosis in the Fontan circuit (one procedure), and access site bleeding (one procedure). Twenty-three interventions involved stent implantation and 22 interventions were balloon angioplasty. Intervention (balloon angioplasty or stent implantation) across a fresh suture line (<42 days) was performed during 27 (52%) procedures. Suture disruption or trans-mural vascular tears were not observed. There was no procedural mortality. Twelve patients (14%) died within 30 days post catheterization and 22 (25%) patients died before hospital discharge.

Conclusions: Similar to data published from high volume centers, our data shows that postoperative diagnostic and interventional catheterizations can be safely performed and yield critically important information. The outcomes reported by high volume centers can be reproduced in the real world setting.