


**AUDITS**

**Interventional cardiology audit report for 2011**

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**Abstract**

In 2011 there were 658 percutaneous coronary intervention cases performed with more than 60% of the patients presenting to the hospital as an acute coronary syndrome. Most procedures consisted of balloon dilatation followed by stent deployment, and 93% of these stents were drug-eluting stents. Procedural success was achieved in 93.3% of cases and an overall major adverse cardiac events rate of 3.6%. This includes a mortality rate of (0.5%).

In addition, there were 25 Core Valve procedures carried out. This is more than twice the amount of patients who had a transcatheter aortic valve implantation in 2010, reflecting the changing direction of the management of structural heart disease.

**Baseline data**

This report looks at the 2011 interventional audit based on data collected retrospectively from the interventional cardiologists who work at Epworth HealthCare. There were 658 cases treating 782 lesions last year. The male/female ratio remains at approximately 75%/25%, with the mean age for the cohort being 69.4 ± 11.6. The average age of males is 74.2 years, which is higher than the average female age of 67.7 years.

The rising influence of type II diabetes on our caseload remains a clinical challenge. In 2011, 27% of the percutaneous coronary intervention (PCI) patients were diabetic (Fig. 1). Over half of the patients had been previously diagnosed with coronary disease, 282 (43%) patients had a previous PCI, while 102 (15.5%) had previous coronary artery bypass surgery. The average body mass index (BMI) of all the PCI patients was 28.2 with only 25% of the cohort classified as a healthy body weight (i.e. BMI <25).

**Indications for PCI**

The acute coronary syndromes account for over 60% of all cases. The group consisted of unstable angina and non-S-T elevation myocardial infarction (NSTEMI) (55%) as well as S-T elevation myocardial infarction (STEMI) and post-myocardial syndromes (6%). The remainder of patients presented with stable angina or returned for a staged procedure.

**Lesions**

Most of the patients (82%) have a single lesion per case, with 17% having two lesions per case being
treated. Only seven cases had three lesions per case and just one patient had four lesions treated per case in 2011.

The left anterior descending and diagonal arteries were treated in almost 40% of the cases, the right coronary artery was treated in 28% of cases, and the circumflex and marginal arteries accounted for 21%. There were less left main lesions treated this year (1.5%).

Similar to previous years, most lesions treated were de novo lesions (91%). Restenotic lesions accounted for 9% and just 1% was treated for stent thrombosis. Lesion complexity is measured according to the American College of Cardiology/American Heart Association (ACC/AHA) classification which showed 4% type A, 18% type B1, 40% type B2 and 38% type C.

Procedures

Most procedures consist of balloon dilation followed by stent implantation (82%) with direct stenting occurring in 11% of the cases. Balloon dilatation only was performed in 4% of the cases with the rotablator required in 1.3% of cases. Over 800 stents were deployed with 93% of these being drug-eluting stents. The Medtronic Endeavor (Medtronic Inc, Minneapolis, MN, USA) and the Abbott Xience (Abbott Laboratories, Abbott Park, IL, USA) were the two stents most frequently used in 2011.

Adjuvant therapies

There has been a sharp decline in the use of glycoprotein IIb/IIIa inhibitors. This year only 7.8% of cases received either abciximab or eptifibatide. The intra-aortic balloon pump was required in 1.4% of patients and temporary pacing was initiated in 1.2% of the PCI cases.

A femoral closure device was used in 67% of cases with the AngioSeal (St. Jude Medical, St. Paul, MN, USA) being the most frequently used (58%).

Results

Procedural success, which is defined as a residual stenosis >30% and thrombolysis in myocardial infarction (TIMI) III flow, was achieved in 93.3% of the lesions attempted.

Major adverse cardiac events (MACE)

The overall MACE rate was 3.6%. Of patients who had a PCI performed, the mortality rate was 0.5% (three deaths). Five patients required coronary artery bypass graft in the same admission after PCI, one patient needed to return for a repeat PCI and three patients suffered a stroke post-PCI.

Procedural complications

Coronary dissection occurred in 4.4% of the cases with other procedural complications at <1% rate. There were four patients with a bleeding complication (0.6%) and six patients with a femoral pseudoaneurysm – three were treated surgically and three were treated conservatively. The number of procedures performed through the radial/brachial arterial approach was measured for the first time this year. In 2011, 44 cases (6.7%) were performed using this approach.

Limitations

The data collected for PCI audit purposes was used for this report. This covers the inpatient hospital stay only. There are no follow-up outcomes for this group of patients after discharge from hospital.

Core Valve

There were 25 Core Valve procedures performed at Epworth HealthCare in 2011 (Fig. 2).
Other cardiac endovascular procedures

In 2011, in addition to the PCI activity in the Catheter Laboratory, there were more than 200 electrophysiology procedures performed with the majority of cases performed for Atrial Flutter.

Future directions

Epworth HealthCare will soon be contributing PCI data to the Victorian Cardiac Outcomes Registry. This will be run through the Department of Epidemiology and Preventive Medicine at Monash University along similar lines to the ANZSCTS cardiac surgery database that Epworth’s cardiac surgery data is now forwarded to. This will provide us with a 30-day follow-up of our PCI patients and the ability for the outcomes to be benchmarked against the other contributing hospitals.

Conflicts of interest

The author has not received any grants, speakers fees or other forms of reimbursement from commercial bodies in any way related to the subject of this article.

Epworth HealthCare cardiac surgery audit report 2011

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Abstract

2011 is the first year Epworth has contributed to Australian and New Zealand Society of Cardiac and Thoracic Surgeons cardiac surgery database. There is now a 30-day follow-up data for all cardiac surgical patients as well as benchmarking of our results with 19 public hospitals and 6 private hospitals contributing data to the Australian and New Zealand Society of Cardiac and Thoracic Surgeons. This is an extension of the John Fuller Melbourne University database that has compiled cardiac surgery data for the last 30 years.

In 2011, 590 cardiac patients underwent cardiac surgery. Epworth Richmond recorded a total of 483, an increase of 26 procedures from 2010 (5.6%) and a 47-procedure increase from 2009 (11.3%). Epworth Eastern performed 107 procedures in 2011. This was an increase of 25 procedures from 2010 (32.9%) and a 34-procedure increase from 2009 (42%).

Figure 1 represents Epworth HealthCare cardiac surgery procedures and mortality by year. Cardiac surgery commenced at Epworth Eastern in 2006 following the opening of the hospital in 2005; therefore, from 2006 the figures represent a combined total over both campuses (i.e. Epworth Richmond and Epworth Eastern).

Of the cardiac surgical procedures performed, 82% of these were performed at the Richmond campus and the remainder at the Epworth Eastern Campus. Isolated coronary artery bypass graft (CABG) surgery comprised 43% of all the cardiac surgery at both campuses. The number of valve-only procedures also included 32 robotically assisted mitral valve procedures and 14 Ross procedures performed at Epworth Richmond.

The survival rate for all Epworth HealthCare cardiac surgery is 98%. The corresponding rate for the entire Australian and New Zealand Society of Cardiac and Thoracic Surgeons (ANZSCTS) database is 97%.

Demographics

The average age of all Epworth patients is 67.1. The male average age is 66.1 with the female average age slightly higher at 69.4 years. Nineteen percent of the patients