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### Outcomes in Aortic Dissection in Patients Presenting to Launceston General Hospital



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**Background:** Aortic dissection is uncommon however its presentation can mimic that of an acute coronary syndrome with significant haemodynamic compromise and death if not considered. Little is known about the patient's trajectory if they survive the initial presentation. We intend to look at outcomes of these patients at our institution.

**Method:** Patients admitted between 2010-2016 were evaluated. They must have had a Type A or B dissection recorded as their primary or secondary diagnosis. Data was obtained by reviewing patient medical records, GP and patient telephone calls. Baseline demographics and cause of dissection were recorded. Outcome evaluated included management plan and mortality.

**Results:** 30 patients had a diagnosis of aortic dissection. In 13.3%, 6.7% and 0% of cases, the cause of dissection was attributed to surgery, inflammatory and CTD respectively.

53.3% of total patients underwent surgery (68% in Type A, 12.5% in Type B) and 43.3% conservative management (27.3% in Type A, 87.5% in Type B). 2/30 (6.7%) did not survive their initial presentation. In-hospital mortality was 9.1% (Type A) and 0% (Type B). During follow-up 7/30 (23.3%) had died.

**Discussion:** Over half of patients presenting with aortic dissection underwent surgery. They were more likely to have Type A dissection. 1 person did not survive the initial resuscitation attempt. Although in-hospital mortality was low, almost a quarter of the patients were found to have died during follow-up.

**Conclusion:** Patients presenting with aortic dissection have high mortality rates even despite surviving their initial hospitalisation.

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### Pulmonary Hypertension (PH) Due to Left Heart Disease: A Predictive Model Using the National Echo Database of Australia (NEDA)



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**Background:** PH due to left heart disease (PH-LHD) is common, but may be difficult to diagnose by echo in the absence of sufficient tricuspid regurgitation (TR).

**Objective:** To create a predictive model using diastolic echo markers to diagnose PH, even in the absence of a measurable TR velocity.

**Methods:** 302,746 echos (174,229 patients) were analysed. Univariate analysis was used to establish significant diastolic markers of PH in 99,025 patients with sufficient TR (79,268 with PH vs 19,767 with no PH). The whole cohort (including no measurable TR velocity) was randomised to 2 groups: Group A (151,373 echos) to perform multivariate regression analysis on the diastolic markers and to create a predictive model; Group B to validate the predictive model (151,373 echos).

**Results:** Age, E', E/e', E:A and indexed left atrial volume (LAVI) were identified in group A as markers of PH-LHD. A constant  $[-6.237 + (0.03 \times \text{Age}) + (0.03 \times \text{LAVI}) + (0.197 \times \text{E:A ratio}) + (0.089 \times \text{E:e}') + (0.078 \times \text{E}')]$  was developed and applied in group A to predict PH-LHD, with AUC of 0.746 (95% CI 0.729-0.762). We then validated this model on Group B, with AUC of 0.757 (95% CI 0.741-0.773).

**Conclusion:** TR is not measurable in 40% of echos. We have developed a new model that can predict PH-LHD with 75% accuracy, regardless of measurable TRV, using age, E', E/e', E:A and LAVI. Our model may be useful in echo software to automatically calculate a probability of PH-LHD.

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