

The National Echo Database Australia (NEDA) and Pulmonary Hypertension

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Background: We have previously demonstrated that pulmonary hypertension, identified using echocardiography (echo) is common and that left heart disease accounts for the majority of PHT. Echo measurements of left heart disease may be helpful in predicting the cause of PHT.

Aims: To examine prevalence of PHT within NEDA, and uncover left heart predictors of PHT.

Methodology: NEDA utilises novel database engineering to combine individual databases into a single database. 307,656 echocardiograms from two laboratories have been included in this analysis. We defined PHT as a right ventricular systolic pressure (RVSP) over 40mmHg.

Results: 180,374 echo's (59%) had a measurable tricuspid regurgitation (TR) velocity profile from which an RVSP could be calculated. PHT from any cause was identified in 39,699 (22%) echo's. Of those in which PHT was identified, the mean RVSP was 51+/-11mmHg, compared with 29.5+/-5.8 in those without PHT ($p<0.0001$). These patients were older than the overall average for NEDA (mean age 74.9+/-12.1 years vs 62.9+/-16.6, $p<0.0001$). The ejection fraction (EF) was similar but significantly different between those with PHT and those without (58.1+/-13.7 vs 61.9+/-8.7%, $p<0.0001$). Measures of diastolic function were markedly different (E:E' ratio 17.1+/-8.5 vs 11.3+/-5.5, $p<0.0001$).

Conclusions: Pulmonary hypertension is common, representing 22% of those with a measurable RVSP in a large echo cohort (over 300,000 echo's). Overall, the EF was similar in PHT compared to those without PHT, whereas surrogate markers of filling pressure such as E:E' ratio were markedly different, underpinning the importance of measuring diastolic function in the evaluation of PHT.