



Service Priorities and Programmes
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Congenital Heart Database: Evaluation of Surgical Outcome Using Risk Stratification at Queen Mary Hospital

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Risk Stratification

Introduction

Paediatric and congenital heart surgery (CHS) is very different from adult heart surgery. It is a subspecialty of high resource utilization that has the potential to repair or palliate the majority of patients with congenital cardiac disease (CHD). The continuous evaluation of quality of care is becoming a duty of surgical practice. Being the only referral centre in Hong Kong for CHS, Queen Mary Hospital (QMH) has its volume and quality continuously improving in recent years. However, systematic surgical audit has been lacking.

Objectives

(1) To collect accurate data for the European Association for Cardio-Thoracic Surgery (EACTS) Congenital Heart Database and to measure institutional performance of CHS in QMH (2) To identify a risk stratification tool for CHS applicable to the local population (3) To improve quality of care and achieve world standards.

Methodology

Prospective data has been collected for patients underwent CHS to the EACTS Congenital Heart Database at QMH since early 2012. The one-year results were achieved from the online report of the EACTS database. Aristotle Basic Complexity (ABC) Score and the STS-EACTS Mortality Score were used as risk stratifications for outcome analysis and benchmarking. The performance was also assessed by calculating the observed versus expected mortality (O/E ratio). The discrimination of the risk stratification tools as predictors of 30-day mortality were quantified by calculating the area under the Receiver Operating Characteristic curve (c-index).

Result

There were 382 CHS performed in 361 patients at QMH in 2012. Complex CHS accounted for around 50% of the workload. Half of the procedures were done for

patients under one year of age, in which neonatal surgery contributed to 22% of the workload. 30-day mortality achieved 1.66%, which was much lower than the average in the EACTS database. The O/E ratio was 0.49. The C-index for the STS-EACTS Mortality Score and ABC Score were 0.84 and 0.72 respectively, which were both impressive. In conclusion, satisfying performance was achieved for CHS at QMH in 2012. The outcomes of CHS at QMH are comparable to world standards. Continuous evaluation of quality of care for patients with CHD has been established in Hong Kong.