Evaluation of the Aristotle complexity models in adult patients with congenital heart disease.

Abstract:
The adult congenital heart disease (CHD) population has surpassed the paediatric CHD population. Half of all mortality caused by CHD occurs in adulthood; in some patients, it occurs during surgery. We sought to assess the potential risk factors for adverse outcome after cardiac operations in adults with CHD, and to evaluate the predictive power of the Aristotle score models for hospital mortality. Procedure-dependent and independent factors, as well as the outcome factors of all consecutive patients aged 16 or more who underwent surgery for CHD between 2005 and 2008 at our institution were evaluated according to the European Association for Cardio-Thoracic Surgery Congenital Database nomenclature. An Aristotle basic complexity (ABC) and an Aristotle comprehensive complexity (ACC) score were assigned to each operation. The discriminatory power of the scores was assessed using the area under the receiver operating characteristics (AuROC) curve. During 542 operations, 773 procedures were performed. The early mortality rate was 2.4%, and the early complication rate was 53.7%. Tricuspid valve replacement (P = 0.009), mitral valve replacement (P < 0.001), elevated lung resistances (P = 0.002), hypothyroidism (P = 0.002) and redosternotomy (P = 0.003) emerged as risk factors for 30-day mortality. Tricuspid valve replacement (P <
0.001), tricuspid valvuloplasty (P = 0.006), mitral valve replacement (P = 0.003), shunt implantation (P = 0.009), surgical ablation (P = 0.024), myocardial dysfunction (P = 0.014), elevated lung resistances (P = 0.004), hypothyroidism (P = 0.002) and redosternotomy (P < 0.001) emerged as risk factors for complications. Mean ABC and ACC scores were 6.6 ± 2.3, and 9.0 ± 3.7, respectively. The AuROCs of the ABC and the ACC scores for 30-day mortality were 0.663 (P = 0.044), and 0.755 (P = 0.002), respectively. The AuROCs of the ABC and the ACC scores for complications were 0.634 (P < 0.001), and 0.670 (P < 0.001), respectively. Surgery for adults with CHD can be performed with low early mortality. However, complications are frequent, especially in patients who require repeat operations for atrioventricular valve incompetence. The ACC score may be helpful to estimate the risk of early mortality.

Zeitschriftentitel / Abkürzung: Eur J Cardiothorac Surg

Jahr: 2013
Band: 43
Heft / Issue: 1
Seiten: 128-34; discussion 134-5
Sprache: eng
Print-ISBN: 1010-7940
TUM Einrichtung: Klinik für Kinderkardiologie und angeborene Herzfehler

Occurences:
- Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Lehr- und Forschungskooperationen mit den Kliniken und Instituten am Deutschen Herzzentrum > Klinik für Kinderkardiologie und angeborene Herzfehler (Prof. Hess) > 2013

entries: