Paediatric Cardiac Surgery: What does the literature look like?

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Introduction

- This review is a citation analysis of the top 100 most cited papers in paediatric cardiac surgery.
- To date, no comparable review of the literature on this topic exists.

Aims

- To identify the most influential papers in paediatric cardiac surgery
- To highlight areas within paediatric cardiac surgery where past research has been concentrated, and how this has evolved through comparing this with the direction of current research.
- To produce a resource of educational value both to trainees in cardiothoracic surgery and all healthcare professionals interacting with children with congenital cardiac defects.

Methods

- Six journals publishing articles pertaining to cardiac surgery in paediatric patients were identified.
- These included Paediatric Cardiology (2009-2018), Congenital Heart Disease (2009-2018), European Journal of Cardiothoracic Surgery (2009-2018), Journal of Cardiac Surgery (2009-2018), World Journal of Congenital and Paediatric Cardiac Surgery (2015-2018) and Seminars in Thoracic and Cardiovascular Surgery (2015-2017).
- The most highly cited articles were collected from each of the six journals and collated.
- The top 100 most cited articles relating to paediatric cardiac surgery were then manually retrieved from this initial list.

Results

- The citation number ranged from 16 – 59.
- 35% of the most highly cited articles in paediatric cardiac surgery were identified from the European Journal of Cardio-thoracic Surgery.
- The most highly cited paper in paediatric cardiac surgery ranked 70th overall a total of 59 citations and discussed how the prenatal diagnosis of congenital cardiac anomalies can affect surgical management and subsequent outcomes.

- The majority of the papers (17%) focussed on patient outcomes and the effect of interventions post-operatively.
- The second most popular topic discussed the surgical approaches to single ventricle defects including hypoplastic left heart syndrome and pulmonary atresia.
- Other topics highly prevalent in the literature included reviews of the efficacy of surgical techniques, the Norwood procedure and its implications as well as the surgical management of Tetralogy of Fallot.

Figure 1: Schematic representation of the distribution of topics in the literature

Figure 2 (left): Schematic representation of the distribution of topics among the journals.

Conclusions

- The immediate postoperative period following cardiac procedures in children is an area of particular importance and interest in the literature surrounding paediatric cardiac surgery.
- The long term sequelae following repair of congenital cardiac defects are well documented, often forming the basis for delivering quality improvement in specialist centres.
- Older articles demonstrate a focus on the management of surgical complications.
- More recent articles reveal a shift towards the review and development of novel surgical techniques in the management of congenital cardiac deformities such as patent ductus arteriosus and single ventricle disease.