

## Hermes

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### Medium-term cardiac outcomes in young people with multi-system inflammatory syndrome: the era of COVID-19

Wong J, Theocharis P, Regan W *et al*  
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Multisystem inflammatory syndrome in children (MIS-C) is a complication of coronavirus disease 2019 (COVID-19). As the name indicates, this pediatric multisystem syndrome leads to a disseminated inflammatory process that can culminate in multi-organ failure. The cardiac manifestations of this inflammatory process supersede those usually associated with COVID-19 and, despite some overlap, are distinct from other inflammatory conditions such as Kawasaki disease. MIS-C can manifest with myocarditis, cardiac impairment, and coronary artery dilation. To further our understanding of this entity and its sequelae, the authors conducted a retrospective single-center longitudinal study of 67 consecutive children with the diagnosis of MIS-C disease with a minimum follow-up period of 6 months. The authors found that the nadir of cardiac function as assessed by echocardiography occurred approximately 1 week after the onset of fever, with a left ventricular ejection fraction calculated as  $50.0 \pm 9.8\%$  (mean  $\pm$  standard deviation [SD]). The authors found dilatation of the coronary arteries during the acute phase in 26.8% of the echocardiographic examinations, and this resolved in all but one child, who developed long-term coronary aneurysms as being followed at 6 months convalescence. Cardiac function became normal in all children by 6–8 weeks, with a mean  $\pm$  SD left ventricular ejection fraction of  $61.3 \pm 4.4\%$  ( $P < 0.001$ ). Additional complications included need for extracorporeal membrane oxygenation in two children, one of whom died; left ventricular thrombus that eventually resolved in one child; and a subendocardial cardiac infarction in another. The authors concluded that pancarditis is a common component of MIS-C disease, with resolution of most sequelae in most children, particularly those with fewer acute complications and those who develop small or no coronary artery aneurysms during the acute phase.

### European Pediatric [sic] Surgeons' Association survey on the use of splenic embolization in blunt splenic trauma in children

Dariel A, Soyer T, Dingemann J *et al*  
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The management of severe splenic injury in children has evolved, and currently the preferred management of even severe injury is nonoperative, with close observation. However, particularly in cases of active extravasation and hemodynamic instability, urgent splenectomy might be necessary. These authors investigated the role of splenic artery embolization in pediatric survivors of severe trauma requiring splenic intervention. The European Paediatric Surgeons' Association designed a questionnaire tool and distributed it to its members. The questionnaire partitioned respondents into those who had access to splenic artery embolization (SE) and those who did not (nSE). There were 157 fully completed surveys, representing respondents from 50 countries (61% from Europe, 83% from academic hospitals). The majority (68%) reported access to splenic artery embolization, with after-hours access to an interventional radiologist being statistically more common at academic centers (75%,  $P = 0.0001$ ) and at centers receiving a greater number of children with severe splenic injuries ( $P = 0.07$ ). Access to splenic artery embolization was also more common in high-income than middle- or low-income countries ( $P < 0.0001$ ). Unsurprisingly, both SE and nSE institutions reported nonoperative management in children who were hemodynamically stable without contrast extravasation on CT. When contrast extravasation was identified, nonoperative management decreased similarly to 50% in SE and 51% in nSE institutions. However, when a hemodynamically stable child also had a spinal injury requiring urgent surgery in prone position, there was a significant decrease in nonoperative management of the splenic injury only at SE institutions, whether without ( $P = 0.009$ ) or with ( $P = 0.0001$ ) contrast extravasation. The authors concluded that the use of splenic artery embolization should be specifically addressed

in future guidelines to determine its role in children with severe splenic trauma with and without comorbid conditions.

### **Renal outcomes in neonates and infants with transposition physiology undergoing arterial switch procedure**

Sharma R, Bhan A, Nautiyal A *et al*

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Infants born with transposition of the great arteries (D-TGA) often undergo arterial switch operation under cardiopulmonary bypass. One of the complications of this and other open-heart procedures requiring cardiopulmonary bypass is acute kidney injury (AKI). These investigators enrolled 142 infants with a mean age of 30 days (range 12–60 days) undergoing arterial switch procedure at a single center between January 2010 and December 2020. AKI developed in 83.1% of the infants, stage 1 in 83.9% of these. The odds ratio of developing AKI increased in infants requiring vasoactive inotropic support such as norepinephrine ( $P < 0.001$ ) or who developed gram-negative infection ( $P = 0.036$ ). There were 17 deaths (14%) in the AKI group and none in the non-AKI group. The greatest mortality occurred in the infants who also had atrial septal defect (ASD) and patent ductus arteriosus, comprising 53% of the neonates who died, likely reflecting a younger age group and lower weight, compared to infants with ventricular septal defect and ASD with or without aortic arch repair (23.5% mortality). The authors concluded that acute kidney injury is relatively common and is associated with poorer outcomes, particularly when complicated by hemodynamic instability and infection.

### **Laparoscopic versus open reduction of intussusception in infants and children: a systematic review and meta-analysis**

Wu P, Huang P, Fu Y *et al*

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Idiopathic ileocolic intussusception is typically reduced nonoperatively. However, in advanced cases, nonoperative

reduction is sometimes unsuccessful and operative intervention becomes necessary. These investigators conducted a review and meta-analysis comparing the efficacy and safety of laparoscopic versus open reduction of intussusception after failure of nonoperative management. The investigation included 502 participants spread among 11 published studies; 275 of the participants received laparoscopic reduction and 227 received open reduction. The investigators found no statistical difference between the two groups in age at operation, and no statistical difference in the operative time. However, there was a statistically significant decrease in the time to oral intake ( $P = 0.0005$ ) and in the length of hospital stay ( $P = 0.002$ ) for the laparoscopic group. There were postoperative complications in 1.2% of children in the laparoscopic reduction group and 1.7% of children in the open reduction group, but this difference was not significant ( $P = 0.71$ ). Recurrences occurred in 6.2% of laparoscopic cases and 4.5% of open reduction cases, and again this was not statistically significant ( $P = 0.69$ ). The authors concluded that laparoscopic reduction is effective and safe in the operative management of children with failed nonoperative enema reduction, with comparable operative time, postoperative complications and recurrence rate, and with the advantage of shorter hospital length of stay and faster recovery to tolerance of oral intake. However, they also indicated that larger and randomized studies are needed to confirm and strengthen these conclusions.

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