

Lessening radiation risk for children with congenital and acquired heart disease

9 May 2017

Newly released recommendations for pediatric radiation safety will be discussed during the Society for Cardiovascular Angiography and Interventions (SCAI) 2017 Scientific Sessions in New Orleans. The position paper, "Radiation Safety in Children with Congenital and Acquired Heart Disease: A Scientific Position Statement on Multimodality Dose Optimization from the Image Gently Alliance," provides cardiologists, radiologists, pediatricians and internal medicine physicians guidance for treating pediatric patients with congenital and acquired heart disease (CAHD). Leading experts will discuss these recommendations during the Image Gently Campaign: Radiation Safety in Pediatric Catheterization session, Wednesday, May 10.

Congenital heart disease is the most common birth defect, affecting an estimated one million children living in the U.S. Forms of acquired heart disease affect an additional one out of every 100,000 children and adolescents annually. Children with CAHD often have complex diseases and many require life-long medical care. As part of their care, they often require cardiac imaging procedures that use ionizing [radiation](#). While these imaging procedures, including fluoroscopically guided procedures such as cardiac catheterization, computed tomography scans, and nuclear medicine studies, are critical for accurate diagnosis and intervention, ionizing radiation in high doses can be harmful. There is general recognition that procedural ionizing radiation doses should be kept as low as reasonably achievable.

"There is a need for consensus recommendations for ionizing radiation dose optimization and a regulation of dose metrics across imaging procedures," said lead author Kevin D. Hill, MD, Division of Pediatric Cardiology, Duke University Medical Center. "Our goal is to focus on approaches that, when properly implemented, will lessen radiation risks for children with [heart disease](#) while still allowing the imaging procedures

to be effective."

Recommendations include strategies for [dose optimization](#) during:

- Cardiac computed tomography procedures, including approaches that can be implemented during patient preparation, as well as scanner-based approaches.
- Nuclear cardiology procedures, including procedural approaches and guidelines for determining administered activity in children.
- Fluoroscopically guided procedures including [cardiac catheterization](#) and electrophysiology procedures, including recommendations focused on hardware features, software configuration and operator dependent techniques.

Other strategies to improve care include a patient-centered approach to imaging, emphasizing education and informed decision making, and programmatic approaches to ensure appropriate dose monitoring.

Provided by Society for Cardiovascular Angiography and Interventions

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