Practice Variations in Sedated Echocardiography and Impact on Repeat Echocardiography in Non-Refractory Kawasaki Disease

Nicholas Clark  
*Children's Mercy Hospital, nclark1@cmh.edu*

Troy Richardson  
*Children's Mercy Hospital, trichardson@cmh.edu*

Jennifer E. Schuster  
*Children's Mercy Hospital, jeschuster@cmh.edu*

Anitha Parthiban  
*Children's Mercy Hospital, aparthiban@cmh.edu*

Henry T. Puls  
*Children's Mercy Hospital, htpuls@cmh.edu*

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**Recommended Citation**  
Clark, Nicholas; Richardson, Troy; Schuster, Jennifer E.; Parthiban, Anitha; and Puls, Henry T., "Practice Variations in Sedated Echocardiography and Impact on Repeat Echocardiography in Non-Refractory Kawasaki Disease" (2019). *Posters*. 87.  
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Practice Variations in Sedated Echocardiography and Impact on Repeat Echocardiography in Non-Refractory Kawasaki Disease

Nicholas A. Clark, MDa, Troy Richardson, MS, MPH, PhDab, Jennifer E. Schuster, MD, MSIC, Anitha Parthiban, MDd, Henry T. Puls, MDa

Divisions of aHospital Medicine, bInfectious Diseases, cCardiology, Department of Pediatrics, Children’s Mercy Kansas City, Kansas City, MO; dChildren’s Hospital Association, Lenexa, KS

Importance

• Sedated echocardiography (SE) is recommended by the American Heart Association 2017 Kawasaki disease (KD) guidelines for children <36 months of age to facilitate quality imaging.1
• Practice variations in obtaining SE and its impact on repeat echocardiography (echo) in non-refractory KD (NRKD) are unknown.

Objectives

• Primary: To describe hospital-level variability in the percent of SE among children <36 months of age admitted with NRKD prior to the 2017 KD guideline update.
• Secondary: To test the association of initial SE with the performance of repeat echos, length of stay (LOS), and total standardized costs.

Methods

• Retrospective cohort study using the Pediatric Health Information System.
• Inclusion Criteria: Children <36 months of age admitted with NRKD from 3/2010 through 2/2017 who received at least 1 echo, only 1 dose of IVIG, and no immunosuppressive medications.
• Exclusion Criteria: KD admissions within prior 6 months, transfers-in, readmissions within 7 days where IVIG or immunosuppressive medication was billed, and hospitals with ≤10 NRKD admissions.
• Primary Outcome: Percent of admissions with both echo and sedation medication billed on the same day.
• Secondary Outcomes: Repeat echo during the same admission, LOS, and total hospitalization costs.
• Chi-square tests, Wilcoxon rank sum tests, and Pearson correlations were utilized; p<0.05 considered significant.

Results

• 40 children’s hospitals; 2887 NRKD admissions; 3216 total echos.
• Percent SE varied from 0% to 87% (median 5.9%, IQR 1.4% to 21.1%, Fig 1).
• 22.4% of initial echos were sedated; 10.1% of all admissions had a repeat echo.
• Hospital-level SE was associated with a lower likelihood for repeat echo (Fig 2).
• Higher NRKD volume was associated with SE, r=0.406 (95% CI 0.08 to 0.637), p=0.009.
• No association between SE and hospital mean LOS (Fig 3) or mean total standardized costs (Fig 4).

Limitations

• Retrospective cohort study reliant upon accurate administrative and billing data.
• Hospital-level data limits generalizability to individual patients.
• Variables other than SE may be associated with repeat echo.

Conclusions and Relevance

• Significant variation between children’s hospitals exists in the use of SE for children <36 months of age with NRKD prior to the American Heart Association 2017 KD guideline update.
• Consideration should be given to performing SE as it may reduce the need for repeat echos without impacting LOS or total costs.

Reference


Contact Information

For questions or additional information, please contact Dr. Clark at nclark1@cmh.edu.