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

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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

- 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 repeat echo (Fig 2).
- 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

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