THE NEW ZEALAND MEDICAL JOURNAL
Vol 117 No 1202 ISSN 1175 8716

Operative rates for acute intussusception in New Zealand

Acute intussusception (IS) is the most common cause of intestinal obstruction in young children.[1] Its non-operative reduction results in less morbidity, shorter hospital stay, and lower costs.[2] Some overseas centres obtain overall operative rates for IS as low as 22%,[3] with the remainder treated by enema reduction. Accurate information on current management is needed to determine whether similar outcomes are achieved in New Zealand.

Data were obtained from the New Zealand Health Information System (NZHIS) for all public hospital admissions in children aged <15 years with a discharge diagnosis of IS (ICD-10-CM International Code K56.1) from January 1998 to June 2003 inclusive. These were compared with local data from paediatric surgical, radiological and hospital discharge coding databases in Wellington and Christchurch Hospitals. The case notes of each patient from the 2 hospitals were reviewed to confirm that IS had occurred and was correctly coded.

While there was general agreement between NZHIS and local databases for identifying IS, the procedural coding data were difficult to interpret. Of the 325 cases identified by the NZHIS, the overall operation rate was 17.5%, gas enema 26%, barium enema 7%, with 49.5% of patients having no procedure recorded. The NZHIS data showed relatively low operation rates in Christchurch (12%) and Auckland (14%), with higher rates in Otago (20%), Wellington (22%), and regions without paediatric specialist surgical services (23%).

Comparisons between data from local audit in Christchurch and Wellington, and NZHIS, confirmed that a large proportion of the procedural coding for management of IS during the study period, especially gas enemas, was missing from the NZHIS database. Of 34 patients admitted to Christchurch Hospital (1998–2003), NZHIS coding missed 29 gas enemas (in 19 children), 5 surgical manipulations, 1 resection, and 2 barium enemas. For 45 patients admitted to Wellington Hospital during the same period, NZHIS data omitted 15 gas enemas (in 15 children), 10 barium enemas, 4 surgical manipulation, and 4 resections. Local audit found surgical rates of 32% in Christchurch and 40% in Wellington, rates much higher than derived from NZHIS data. Furthermore, some diagnostic coding errors were discovered. NZHIS failed to detect 5 cases found by local audit and 4 patients from NZHIS were not identified by the national paediatric surgical database during the local audit process.

Thus the reliability of current coding and audit systems makes it difficult to determine the quality of IS management with any degree of accuracy and certainty. Referral bias from the transfer of more difficult patients from smaller regional hospitals might explain the higher operative rates encountered in the two audited tertiary centres.[4] To ensure that the optimal management of IS in New Zealand is being achieved, prospective collection of clinical indicator data for IS, along the lines advocated by the Royal Australasian College of Surgeons and Quality New Zealand, is needed. The unexpected association between a tetravalent rhesus-based rotavirus vaccine (RRV-TV; Rotashield; Wyeth-Lederle Vacccines and Pediatrics) and IS further reinforces

© NZMA

the importance of accurate IS data collection, particularly with the imminent licensure of new rotavirus vaccines.[5]

Ellen Chen
Medical Student
Christchurch School of Medicine and Health Sciences

Keith Grimwood
Professor of Paediatrics and Child Health
Wellington School of Medicine and Health Sciences

Spencer Beasley
Professor of Paediatric Surgery
Christchurch School of Medicine and Health Sciences

Ellen Chen received a summer studentship supported by a non-directional grant from GlaxoSmithKline. We thank Rebecca Kay of NZHIS for assistance with case detection.

References:

1. Heller RM, Hernanz-Schulman M. Applications of new imaging modalities to the evaluation of common pediatric conditions. J Pediatr 1999;135:632–9.
2. Reid R, Kulkarni M, Beasley S. The potential for improvement in outcome of children with intussusception in the South Island. NZ Med J 2001;114:441–3.
3. Saxton V, Katz M, Phelan E, Beasley SW. "Intussusception: a repeat delayed gas enema increases the non-operative reduction rate". J Pediatr Surg 1994;29:588–9.
4. Bratton SL, Haberkern CM, Waldhausen JHT, et al. Intussusception: hospital size and risk of surgery. Pediatrics 2001;107:299–303.
5. Kramarz P, France EK, Destefano F, et al. Population-based study of rotavirus vaccination and intussusception. Pediatr Infect Dis J 2001;20:410–5.

 © NZMA