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# INTUSSUSCEPTION (IS) in children aged less than 12 months

**Abstract**

Intussusception (IS) is caused by a bowel section telescoping, causing obstruction. It is a surgical emergency, but most cases can be managed non-surgically with good outcome. Incidence is highest in children under the age of one year and males seem to be affected more.[1,2] There is no clear evidence from previous studies of seasonal variation. Previous retrospective studies in the UK have shown an incidence of 0.6-0.76 per 1,000 populations (children < 12 months).[1,3,4] However, recent data from other developed countries indicates declining trend, with decreases of 39-55% since 1990. The most recent European study from the Swiss Paediatric Surveillance Unit, showed an incidence of 0.4 per 1000 population in children aged less than 12 months.[5-7]

The study primary objective is to estimate the current incidence of intussusception.

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**Background**

Availability of high quality IS epidemiological data at a national level is becoming a high priority due to the availability of new rotavirus vaccines. A previous oral rotavirus vaccine (RotaShield®; Wyeth Vaccines) was withdrawn from the United States in 1998, shortly after its introduction due to evidence for a causal association with IS. Two new rotavirus vaccines have received European approval (Rotarix®; GSK Vaccines and Rotateq®, Sanofi Pasteur). However, the UK Joint Committee on Vaccination and Immunisation has yet to make recommendations for their use.

The risk of IS has been a prime consideration throughout the development of these new rotavirus vaccines. Large clinical trials have been able to exclude any significant association with relatively high power,[8-9] but nevertheless many countries are implementing high quality IS surveillance studies to obtain data on background incidence. This is in order to provide clear statements to the public and health professionals about the incidence of IS pre-vaccination, and have a baseline against which to rapidly evaluate any post-vaccination adverse event reports that may be submitted. It is considered a high possibility that safety concerns will be raised, potentially causing controversy and adversely affecting uptake.

**PTO**

**Coverage** United Kingdom and Republic of Ireland.

**Duration** March 2008 - March 2009 (13 months)

**Objectives**

- To estimate the incidence of IS in children aged less than 12 months.
- To describe the epidemiology of IS, including:
  - age, gender and ethnicity
  - associated risk factors
  - variation in management strategies (enema, surgical reduction, surgical resection, spontaneous recovery)
  - short-term outcomes (recovery, death).

**Case definition**
Any child under 12 months of age who in the opinion of the notifying paediatrician / surgeon, has suspected or confirmed intussusception based on clinical, radiological and /or surgical findings. Reported cases will then be classified by the investigators as definite, probable, possible, or suspected intussusception cases according to internationally agreed and validated Brighton Collaboration criteria.[7]

**Reporting instruction**
Please report any child aged less than 12 months who has suspected or confirmed intussusception based on clinical, radiological and or surgical findings.

**Methods**
Paediatricians and paediatric surgeons will be asked on a monthly basis, via the orange / yellow card system, to report all cases meeting the case definition. Notifying clinicians will be asked to complete a questionnaire seeking demographic details, clinical, management and outcome at hospital discharge. No specimens are required.

**Ethics Approval**
This study has been approved by the Wandsworth Research Ethics Committee, reference 07/Q0803/62 and is exempt from site-specific assessment. Copies of the REC application, the REC approval letter and the study protocol will be sent to each notifying paediatrician with a request to kindly forward them to their R&D department if requested. The study also has PIAG approval (PIAG/BPSU 2-05(FT1)/2007).

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**References**

1. Cameron J, Walsh D, Finlayson A, Boyd J. Oral polio vaccine and intussusception: a data linkage study using records for vaccination and hospitalization. American Journal of Epidemiology 2006; 163:528-33.
2. Kuppermann N, O'Dea T, Pinckney L, Hoecker C. Predictors of intussusception in young children. Arch Pediatr Adolesc Med 2000; 154:250-5.
3. Jick H, Vasilakis-Scaramozza C, Jick SS. Live attenuated polio vaccine and the risk of intussusception. British Journal of Clinical Pharmacology 2002; 52:451-453.
4. Gay N, Ramsay M, Waight P. Rotavirus vaccination and intussusception. Lancet 1999; 354:956.
5. Fischer T, Bihrmann K, Perch M, et al. Intussusception in early childhood: a cohort study of 1.7 million children. Pediatrics 2004; 114:782-5.
6. Chang H, Smith P, Ackelsberg J, Morse D, Glass R. Intussusception, rotavirus diarrhoea, and rotavirus vaccine use among children in New York state. Pediatrics 2001; 108:54-60.
7. Tapiainen T, Bar G, Bonhoeffer J, Heininger U. Evaluation of the Brighton Collaboration case definition of acute intussusception during active surveillance. Vaccine 2006; 24:1483-7.
8. Vesikari T, Matson DO, Dennehy P et al. Safety and efficacy of a pentavalent human-bovine (WC3) reassortant rotavirus vaccine. N Engl J Med. 2006; 354:23-33.
9. Ruiz-Palacios GM, Perez-Schael I, Velazquez FR et al. Safety and efficacy of an attenuated vaccine against severe rotavirus gastroenteritis. N Engl J Med. 2006; 354:11-22.