Acute Symptomatic Infectious Hepatitis in Hospitalised Children
(Short Study Name: Acute Hepatitis)

Abstract

Acute infectious hepatitis can be associated with significant morbidity and may be severe enough to cause liver failure and warrant liver transplantation. Most childhood cases are caused by viruses such as hepatitis A (HAV) and hepatitis B (HBV) viruses, although other pathogens can also be responsible. Effective vaccination against both HAV and HBV are available but not routinely used in the UK because these infections are considered to be rare.

This study aims to assess the burden of childhood hospitalisations for symptomatic acute infectious hepatitis, clinical characteristics, investigations, aetiology, management and short-term as well as long-term outcomes.

We hope that the results of our study will increase awareness of the condition among paediatricians and the public, help improve the way we manage children with acute infectious hepatitis and develop national strategies to prevent such cases occurring in the first place through, for example, routine immunisation.

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Background

Hepatitis is a key public health priority in most industrialised countries, yet there are very few studies published in the literature, particularly among children in industrialised countries, mainly because of limitations within existing national surveillance systems. Acute hepatitis is characterised by an acute onset of discrete symptoms including fever, jaundice, abdominal pain, nausea and vomiting, which may occasionally progress to fulminant liver failure. Most childhood cases are infection-related, with HAV and HBV being the commonest causes. Other viral and non-viral infections may also be responsible. Non-infectious causes such as autoimmune, metabolic and drug-induced hepatitis may also cause acute hepatitis but are extremely rare. Little is known about the epidemiology, causative agents, clinical features, risk factors, management or outcome of children with acute infectious hepatitis in industrialised countries. Unlike existing surveillance systems, the BPSU methodology allows collection of clinical and epidemiological data for all causes of acute infectious hepatitis, thus not only putting the
contribution of vaccine-preventable causes in context with the total burden of disease, but providing invaluable data on other potential causes of acute infectious hepatitis and enabling comparison of disease characteristics caused by different pathogens. Understanding the contribution of different agents causing acute infectious hepatitis in childhood and possible risk factors will be important for informing the investigation, prevention and management of this condition.

Coverage
United Kingdom and the Republic of Ireland

Duration
January 2014 – January 2015 (13 months surveillance) with a 12-month follow-up questionnaire

Research Questions
- To estimate age-group specific hospitalisation rates for symptomatic acute infectious hepatitis, as well as laboratory-confirmed acute HAV and HBV infections
- To describe the clinical features, investigations, organisms involved, known risk factors, management and outcome
- To compare the clinical features, risk factors, management and outcome of hospitalised children with acute HAV, acute HBV and other pathogens

Case definition
An acute hepatitis in any infant or child aged 1 month up to 14 years of age with:
- discrete onset of symptoms (e.g. fever, jaundice, abdominal pain, fatigue, loss of appetite, nausea or vomiting); AND
- elevated serum alanine aminotransferase (ALT) levels (>2 x upper limit of normal); AND
- not due to drug-induced, metabolic or auto-immune hepatitis

Reporting instructions
Please report any cases of acute hepatitis in a child aged one month to 14 years seen within the past month fitting the surveillance case definition. Please report even if the case has been referred to or from your paediatric/surgical colleagues

Methods
Clinicians reporting a case of acute symptomatic hepatitis through the BPSU orange card system will be sent a questionnaire which explores the demographic and clinical information about the affected child. A follow-up questionnaire will also be sent to reporting clinicians after one year to assess the long-term outcomes in the affected child.

Ethics approval
This study has been approved by NRES Committee – East of England – Cambridge Central REC (ref: 13/EE/0392). Public Health England has approval under Section 251 of the NHS Act 2006 to process confidential patient information for public health purposes (see http://www.legislation.hmso.gov.uk/si/si2002/20021438.htm).

Support group
British Liver Trust (www.britishlivertrust.org.uk)
Children’s Liver Disease Foundation (www.childliverdisease.org)

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