Severe hyperbilirubinaemia in the newborn

Abstract
Severe neonatal jaundice and bilirubin encephalopathy have been reported with increasing frequency in North America and Europe in the past decade. There have been no such published reports from Britain. The primary objective of this 13-month prospective study is to determine the incidence of severe neonatal jaundice in Britain and Ireland. The secondary objectives are to document clinical and demographic factors associated with severe neonatal jaundice, and to document acute and medium term (up to 12 months) complications.

Principal Investigator
Dr Donal Manning, Consultant Paediatrician,
Department of Paediatrics, Wirral Hospital, Arrowe Park,
Wirral, Merseyside CH49 5PE
Telephone number: 0151 678 5111 Fax: 0151 604 7138
E-mail: donal.manning@whnt.nhs.uk

Co-investigators
Dr Peter Todd, Consultant Paediatrician, Wirral Hospital, Merseyside
Dr Melanie Maxwell, Consultant in Public Health, Wirral Hospital, Merseyside
Dr Mary Jane Platt, Senior Lecturer in Public Health, University of Liverpool

Duration
June 2003-June 2004 (13 months)

Coverage
United Kingdom, Channel Islands and the Republic of Ireland

Background
During the past decade, encephalopathy due to severe hyperbilirubinaemia in the newborn has been reported with increasing frequency in the United States and Europe. This potentially preventable condition causes substantial mortality, and neurodevelopmental morbidity in survivors. Previously it had been encountered mainly in babies with severe Rhesus isoimmunisation, and had declined in frequency thanks to effective prevention and treatment of this condition. The reappearance of bilirubin encephalopathy has been ascribed to earlier discharge of newborn babies, and to a more relaxed approach to the management of jaundice in well term babies, particularly those breast fed. These trends have occurred in Britain, but there have been no systematic studies reporting an increased incidence of severe hyperbilirubinaemia, nor of bilirubin encephalopathy, in Britain. The primary objective of this study is to determine the incidence of severe hyperbilirubinaemia in the newborn in the United Kingdom and the Republic of Ireland.

Case definition
Unconjugated hyperbilirubinaemia (serum bilirubin ≥510 micromols/L) in the first month of life.

Research questions
1) What is the annual incidence of severe unconjugated hyperbilirubinaemia during the first month of life in the United Kingdom and Republic of Ireland?
2) What known risk factors and demographic features are associated with severe hyperbilirubinaemia in the newborn?
3) What are the consequences of severe hyperbilirubinaemia in this group of babies?
Severe hyperbilirubinaemia in the newborn

Study Method
Paediatricians will be asked to report via the BPSU orange card system any babies seen in the preceding month with severe neonatal jaundice according to the case definition. Those clinicians giving a positive response will be sent a postal questionnaire to gather information on timing of presentation, possible predisposing factors and co-morbidity, management, and clinical outcome.

Minimal identifying information will be sought. The date of birth, the baby’s initials and the reporting hospital case sheet number will be sought, and the NHS number if available. These will help prevent duplicate reporting, and the date of birth will allow us to calculate timing, such as age at discharge from the maternity unit and age at presentation with severe jaundice. The initials and hospital number will also be used to help reporting paediatricians retrieve the clinical notes when asked for follow-up details after 12 months. The initials, hospital number and NHS number will not be included in the study database but kept on a mailing list along with the contact details of the reporting clinician. All the requirements of the Data Protection Act and Caldicott guidelines will be followed.

Reporting paediatricians will be sent a brief follow-up questionnaire after 12 months seeking information on crude outcomes, including death or survival with neurodevelopmental impairment, and details of hearing testing.

Reporting instructions
Please report any cases seen in the past month that meet the surveillance case definition instructions.

Ethical approval
The study has been approved by the London Metropolitan MREC.

Funding
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References


