

BRITISH PAEDIATRIC SURVEILLANCE UNIT

Royal College of Paediatrics and Child Health
5-11 Theobalds Road, London WC1 X 8SH

Tel: 020 7092 6173 Fax: 020 7092 6196 Email: bpsu@rcpch.ac.uk Web: <http://bpsu.inopsu.com>

SUDDEN UNEXPECTED EARLY POSTNATAL COLLAPSE

Abstract

Sudden unexpected collapse of a healthy term infant in the early postnatal period is a rare and devastating scenario in which 50% of infants die and the majority of survivors suffer severe neurological damage. Although well recognised in individual centres, these infants fail to register nationally, a missing group of 'mortality and morbidity' who are currently under-investigated. A UK preliminary survey has shown that there is no consistent approach to investigation among clinicians and many cases remain unexplained. We propose the first national study aimed to describe the incidence, presenting features, investigation and outcome of such infants. Consultant paediatricians will be asked to report all cases of sudden unexpected postnatal collapse every month. A questionnaire seeking demographic and clinical data will be sent to reporting clinicians at the point of notification and again at 12 months to determine outcome. The study's findings will raise the profile of this group and help to establish guidelines for the optimal early postnatal care of all infants. The study also expects to demonstrate the widely disparate approach to investigation of these infants and thus highlight the need for a consensus.

Principal Investigator

Dr Julie-Clare Becher
Consultant Neonatologist and Honorary Senior Lecturer
Department of Neonatology
Simpson Centre for Reproductive Health
Royal Infirmary of Edinburgh
Little France
Edinburgh EH16 4SA
Telephone 0131 242 2576/ 2567 E-mail: julie-clare.becher@luht.scot.nhs.uk

Co-investigators

Dr Andrew Lyon; Email: andrew.lyon@luht.scot.nhs.uk
Dr Shetty Bhushan; Email: shetty.bhushan@luht.scot.nhs.uk

Website

<http://bpsu.inopsu.com/studies/current.html>

Background

Sudden unexpected collapse in the early postnatal period of a previously well term infant is a rare but well-recognised scenario. The reported incidence is 0.07-0.5/1000 live births (Rodriguez-Alarcon 1994, Polberger 1985, Hayes 2004). Mortality is reported at 50% with significant neurological sequelae in the majority of survivors. There is no consistent approach to investigating such infants and although a cause may be identified in some, many remain unexplained. Many of the infants reported in the literature are found face down on their mother's breasts or abdomen suggesting that significant airway compromise may be a contributing factor during a critical adaptation period. We had recognised such cases locally in recent years and through concern that this was becoming more common, undertook a survey of UK neonatal colleagues. Through this initial survey, it was clear that this was a recognised scenario, albeit rare in any one centre, with around thirty centres who responded reporting one or two cases over the same number of years. However, these cases fail to register on a population wide basis, a missing group of 'mortality and morbidity' who are currently under-investigated.

Coverage

United Kingdom and Republic of Ireland

Duration

November 2008 – November 2009 (13 months)

Research Questions

Specific aims of the project are to:

- To estimate the incidence of sudden early postnatal collapse in apparently healthy term infants
- To describe the clinical presentation and associated factors of infants undergoing sudden early postnatal collapse
- To describe current management of such infants including investigations
- To determine the outcome at discharge and at 2 years

Case definition

Infants ≥ 37 completed weeks of gestation with a 5 minute Apgar score of ≥ 8 who have a sudden and unexpected collapse in hospital ≤ 12 hours of birth requiring resuscitation and who either die or go on to require intensive care.

Definitions:

'Resuscitation'- positive pressure ventilation by bag and mask or endotracheal tube,

'Intensive care'- requiring positive pressure ventilatory support following admission

Examples:

1. Male infant born at 41 weeks gestation by SVD, Apgar 9 at 5 minutes. Placed skin to skin to establish breast feeding whilst mother having perineum sutured. At 50 minutes of age, found grey, apnoeic and very bradycardic prone on his mother's chest. Required cardiopulmonary resuscitation and was admitted to the neonatal unit ventilated where he suffered multiorgan failure. Survived neonatal period but was discharged home tube feeding.
2. Female infant at 37 weeks gestation born by forceps for failure to progress. Well at delivery, no resuscitation required. Had several breast feeds over the subsequent hours. Nappy change at 10 hours of age and appeared to be well. Found by parents at 11 hours of age in cot, lifeless. Resuscitation unsuccessful.

EXCLUSION CRITERIA

Infants < 37 weeks

Infants with 5 min Apgar score of < 8

Infants who collapse outside of hospital

Infants who collapse > 12 hours of age

Infants who collapse who survive resuscitation but who do not require intensive care

Reporting instructions

Please report any cases you have seen in the last month which meet the surveillance definition including explained and unexplained cases. Please report to the BPSU even if you believe the case may have been reported from elsewhere. Please note that the BPSU surveillance does not replace other ongoing systems for notification of infant death, in particular the Child Death Review System.

Methods

Paediatricians reporting a case through the orange card system will be asked to complete a questionnaire seeking demographic and relevant clinical information. A further follow-up questionnaire will be sent after one year to gather information on outcome.

Ethics approval

This study has been approved by the London REC (Ref: 08/H0718/47) and has been granted PIAG Section 251 Support (PIAG 5-06(FT1)/2008)

Funding

WellChild

References

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