

SUDDEN UNEXPECTED EARLY NEONATAL DEATH OR COLLAPSE IN PREVIOUSLY HEALTHY TERM INFANTS IN THE FIRST 7 DAYS OF LIFE

BACKGROUND

The incidence of sudden unexpected and unexplained death or neonatal collapse is reported as between 0.035/1000 to 0.4/1000 live births. Although rare, greater than half of these infants die and the majority of survivors have significant long term neurodevelopmental morbidities.¹⁻⁷ There is currently no National system available in Australia for investigating and reporting these cases.

We aim to establish the current incidence of sudden unexplained death or collapse in the early neonatal period (first 7 days of life) in Australia. In the reported literature many of these infants are found face down on the mother's breasts suggesting that airway compromise may be a contributing factor. Other risk factors include maternal analgesia, bed-sharing and prone sleeping. In the study by Polberger et. al. all deaths or collapse occurred between 11pm and 6am.² We aim to document the risk factors and outcomes for such cases in Australia.

It is clear from the retrospective examination of neonatal sudden unexplained death in infants in NSW, that the history, examination, and the death scene investigations are incomplete and under investigated.⁸ Furthermore, the failure to register on a population wide basis means national guidelines for safe sleeping are inadequate especially in this early postnatal group, as most definitions of SIDS commence after day 7 or 28 days of life. Of the 123 neonatal sudden unexplained infant deaths reported, 37 (30%) occurred in the first 7 days of life.⁸

A recent study using the British Paediatric Surveillance Unit, showed that in 30 of 45 cases there was no identified underlying disease/abnormality but in 24 there was clinical or pathological evidence of airway obstruction while breastfeeding or in a prone position.⁹ The authors called for development of guidelines for safe postnatal care of infants, especially for new mothers.⁹

It is anticipated that the information obtained as a result of this APSU study will lead to the development and initiation of policy directives aimed at safe postnatal management of healthy newborns. Preventative strategies including education programs for parents and carers are important in reducing the incidence of these conditions.

STUDY QUESTIONS

- What is the current incidence of sudden unexpected death in previously healthy infants ≥ 37 weeks gestation during the first week of life in a health facility in Australia?
- What is the current incidence of sudden unexpected neonatal collapse in previously healthy infants ≥ 37 weeks gestation, requiring resuscitation and admission to intensive care in the first week of life in Australia?
- What are the underlying aetiologies for such events?
- What are the associated known risk factors?
- What preventive strategies should be instituted to avert such deaths?
- What are the long term sequelae (neurodevelopmental outcomes) in infants who survive these events?

CASE DEFINITION

1. Please report **sudden unexpected death*** in any health facility of a previously healthy newborn (≥ 37 weeks gestation) occurring within the first 7 days of life where day 1 is the day of birth including infants pronounced dead on arrival

2. Please report **sudden unexpected collapse** in any health facility in a previously healthy newborn (≥ 37 weeks gestation) requiring resuscitation, ventilation for > 1 hour, and admission to intensive care, occurring within the first 7 days of life where day 1 is the day of birth

*Sudden unexpected death includes deaths that:

- were unexpected and unexplained at autopsy (i.e. Those meeting the criteria for sudden infant death syndrome – SIDS)
- occurred in the course of an acute illness that was not recognised by Carers and/or health professionals as potentially life-threatening
- arose from a pre-existing condition that had not been previously recognised by health professionals
- resulted from accident, trauma or poisoning where the cause of death was not known at the time of death

Exclusions:

- Infants > 7 days old

- Infants with known severe congenital anomalies likely to lead to death
- Infants who require minimal resuscitation defined as ventilation less than one hour duration and who do not require admission to intensive care.

FOLLOW-UP OF REPORTED CASES

A questionnaire requesting further details will be forwarded to clinicians who report a case of Sudden Unexpected Early Neonatal death or Collapse in previously Healthy Term Infants

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