

# The unexpected: Sudden infant death in the postnatal period

Kayla Feldman MD FRCPC FAAP, Department of Paediatrics, North York General Hospital, Toronto, Ontario



A female infant was born to a 19-year-old primigravida following an uneventful pregnancy. Spontaneous vaginal delivery occurred in a community hospital at 40 weeks' gestation. The mother did not receive any opioid analgesics before delivery. Apgar scores were 9 at 1 min and 10 at 5 min. The baby was admitted to the maternal newborn service. Assistance with breastfeeding in the side-lying position was provided to the mother.

On a routine check 9.5 h after birth, the baby was found blue and unresponsive, lying in bed beside the mother. The mother reported that she had been breastfeeding the baby and had fallen asleep. Cardiopulmonary resuscitation of the infant resulted in recovery of circulation after approximately 10 min. The baby was transferred to the regional centre for ongoing care. She was treated with therapeutic hypothermia for 72 h for severe hypoxic ischemic encephalopathy. She experienced one episode of seizure-like activity, which was treated with phenobarbital. She required cardiac support with inotropic agents. Both her electroencephalogram and magnetic resonance imaging were abnormal. Her neurological examination remained abnormal with absence of a gag reflex, fixed and dilated pupils, and lack of spontaneous movement. A discussion was undertaken with the family regarding withdrawal of care. The baby died shortly thereafter. Blood culture, metabolic screening and echocardiography were all negative. Permission for autopsy was not granted.

Unexpected sudden infant death (SID) and severe apparent life-threatening events in a healthy newborn infant in the early postnatal period are rare. Recent population-based studies from the United Kingdom (1) and Germany (2) found incidences of five per 100,000 live births within the first 12 h and 2.6 per 100,000 live births within the first 24 h, respectively. Despite initial resuscitation, there is a high risk of death or long-term neurological disability (1). In a minority of cases, an underlying condition will be found, but most remain unexplained (1,2). Factors identified as possibly playing a role include prone position of an infant on the mother's chest (1,2), airway obstruction during breastfeeding (1), primiparity (1-3) and maternal fatigue/sedation (1,3).

This issue is of both medical and public health importance because some of these catastrophic events may be preventable. There is currently no national system available in Canada for investigating and reporting these cases. The Canadian Paediatric Surveillance Program study on SID/severe apparent life-threatening events began in January 2013 to determine the incidence of SID and severe apparent life-threatening events in Canada, to collect information on associated risk factors, to describe the clinical presentation, to document possible underlying conditions and causes, and to describe the short-term outcomes of surviving infants.

## LEARNING POINTS

- Accidental asphyxia is a rare but possible outcome if mothers fall asleep in bed with their infants while breastfeeding.
- Mothers should consider nursing out of bed or returning their infants to their cots if they are feeling fatigued. Alternatively, a second person (eg, partner, family member) should be available to take the infant from the mother after she has finished breastfeeding.
- Close surveillance of an infant's condition by experienced staff may be necessary to prevent SID/severe apparent life-threatening events during the initial critical period of adaptation.

## REFERENCES

1. Becher J-C, Bhushan SS, Lyon AJ. Unexpected collapse in apparently healthy newborns – a prospective national study of a missing cohort of neonatal deaths and near-death events. *Arch Dis Child Fetal Neonatal Ed* 2012;97(1):F30-4.
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*The Canadian Paediatric Surveillance Program (CPSP) is a joint project of the Canadian Paediatric Society and the Public Health Agency of Canada, which undertakes the surveillance of rare diseases and conditions in children and youth. For more information, visit our website at [www.cpsp.cps.ca](http://www.cpsp.cps.ca)*

Correspondence: Canadian Paediatric Surveillance Program, 2305 St Laurent Boulevard, Ottawa, Ontario K1G 4J8.

Telephone 613-526-9397 ext 239, fax 613-526-3332, e-mail [cpsp@cps.ca](mailto:cpsp@cps.ca)

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