**Cronobacter sakazakii Infection from Expressed Breast Milk, Australia**

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**Cronobacter sakazakii** neonatal infections are often epidemiologically linked to the consumption of contaminated powdered infant formula. We describe a case resulting from consumption of contaminated expressed breast milk, as confirmed by whole-genome sequencing. This case highlights potential risks associated with storage and acquisition of expressed breast milk.

**Cronobacter sakazakii** neonatal infections can cause severe systemic infection and meningitis, resulting in mortality rates as high as 42% (1). **C. sakazakii** infections have been epidemiologically linked with contaminated powdered infant formula (PIF), whereas reports of **Cronobacter** infection in infants exclusively fed breast milk are rare (1). In 2016, a case of clinical meningitis was reported in an infant who had consumed expressed breast milk (EBM) contaminated with **C. sakazakii** (2). The source of contamination was unknown; however, pulsed-field gel electrophoresis revealed indistinguishable isolates from a contaminated breast pump and EBM. We report a similar case of an infant with onset of **C. sakazakii** clinical meningitis after consumption of contaminated EBM. We confirmed the source of the infection by using whole-genome sequencing (WGS).

In 2015, a 30-year-old woman underwent preterm labor at 27 weeks and 5 days and delivered a male infant. Cultures of infant blood specimens collected soon after birth were negative for bacteria and fungi. From day 2 of life, the infant received probiotics (Infloran; Laboratorio Farmaceutico, Mede, Italy) and was fed exclusively with powdered infant formula (PIF), whereas reports of **Cronobacter** infection in infants exclusively fed breast milk are rare (1). In 2016, a case of clinical meningitis was reported in an infant who had consumed expressed breast milk (EBM) contaminated with **C. sakazakii** (2). The source of contamination was unknown; however, pulsed-field gel electrophoresis revealed indistinguishable isolates from a contaminated breast pump and EBM. We report a similar case of an infant with onset of **C. sakazakii** clinical meningitis after consumption of contaminated EBM. We confirmed the source of the infection by using whole-genome sequencing (WGS).

Per hospital practice at the time of this case, mothers who were inpatients and expressing breast milk were advised to perform hand hygiene before using or cleaning the hospital breast milk pump kits. The kits were washed in hot soapy water, rinsed and dried after use, and sterilized every 24 hours. After discharge from the hospital, mothers were to use their own reusable kits and breast pumps and were given the same cleaning advice about the kits. In this case, it appears that although verbal and written advice was given initially, no follow-up discussion occurred, and a pump was used without sterilization of the kit. Subsequently, several changes have been instituted, including processes to ensure daily discussion with mothers about breastfeeding and breast milk hygiene, especially given that parents of preterm infants are often in an environment.
unexpected and highly stressful situation, when information retention is difficult. Women are also advised to rent or buy a breast pump rather than borrow a pump.

Unfortunately, the risks associated with EBM are not well recognized. This fact is becoming increasingly important because globally an increasing number of premature infants are cared for on neonatal units and require EBM until feeding is established. This case and others of Cronobacter isolation from EBM or contaminated expressing equipment suggest that consumption of contaminated EBM might be more common than initially thought, highlighting the importance of education to new parents who will be expressing breast milk for their infants. Recommendations by the US Centers for Disease Control and Prevention include correct sanitation procedures to clean breast pumps, safe storage techniques between breast pump use, and safe storage of EBM (5). If infants are unable to feed directly at the breast, reducing exposure of EBM to environmental organisms through appropriate care of equipment is essential to maintain the safety of this vital source of nutrition.

About the Author
Dr. McMullan is a neonatologist at the Royal Prince Alfred Women and Babies Hospital. Her primary research interest includes central line–associated infections in neonates.

References

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