Saving lives and resources

Wider use of donor breastmilk for preterm infants promises to cut costs while reducing life-threatening complications

Every year, an estimated 150,000 babies are born prematurely in South Africa. One in four of these infants have difficulties with breastfeeding because of their slow development, or the mother is unable to breastfeed or is unavailable. For many, donor human milk can be lifesaving.

Compared with use of formula, feeding breastmilk lowers the incidence of hospital-acquired infections among preterm infants.[1] As a result, these infants require fewer days in expensive neonatal intensive care units (NICUs). Their health improves more rapidly, and they are more likely to avoid or survive dangerous complications. For infants whose mothers cannot provide breastmilk, donor breastmilk can be cost-saving as well as lifesaving.

REDUCING MORBIDITY AND MORTALITY

Because their immune system is compromised, premature infants are especially vulnerable to hospital-acquired infections, such as septicemia and necrotizing enterocolitis (NEC), a life-threatening, acute inflammatory disease of the intestines. In several studies, the incidence of NEC has approached 12% among premature infants weighing less than 1,500 grams at birth. Mortality rates can be as high as 50%, depending on severity. Some infants have nonreversible complications such as neurological impairment and a short bowel with malabsorption.

Donor breastmilk reduces infection rates

At one hospital in South Africa, after donor breastmilk became available and human milk could be fed exclusively to premature infants, the incidence of hospital-acquired bloodstream infections decreased from 16.4% to 9.8%. Infections due to methicillin-resistant *Staphylococcus aureus* disappeared, as did fungal infections. Virtually no infections due to *Klebsiella pneumoniae* occurred. (S. Delport, unpublished data, 2011)

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Many studies have found that feeding breastmilk rather than formula reduces morbidity and mortality from infectious diseases among infants. The benefits are particularly dramatic among preterm and low-birthweight infants for prevention of NEC or late-onset sepsis (Figure 1). A study published in *The Lancet* found that infants fed breastmilk are six to ten times less likely than those fed formula to develop NEC.[2] A systematic review and meta-analysis by Boyd et al. found that donor milk reduced NEC incidence by 79% among preterm infants.[3]

In South Africa, the improvement in infant health outcomes attributed to human breastmilk has been remarkable. In Gauteng, for example, a hospital that provides breastmilk for infants in the NICU has reported an NEC incidence of only 1.5%, whereas a referral hospital in the same community that does not provide breastmilk in the NICU has experienced an NEC incidence of 10% (S. Delport, Kalafong Hospital, unpublished data, 2011). Doctors believe the difference in incidence is linked to the protective effects of donor breastmilk.

REDUCING HOSPITAL COSTS

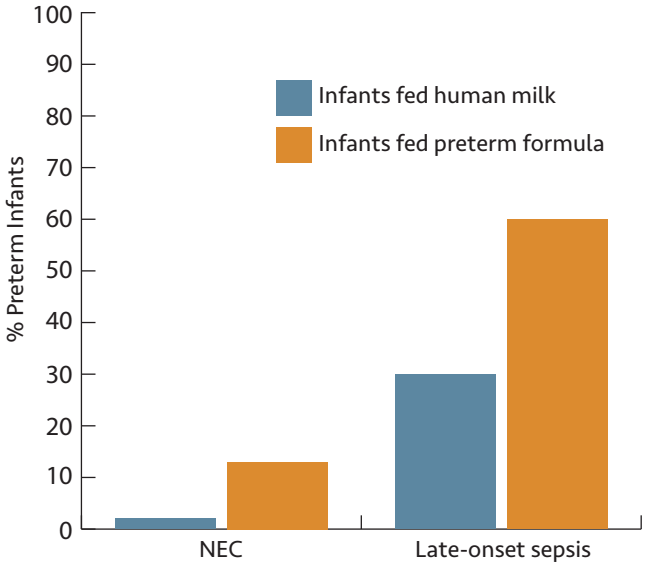
Premature infants fed breastmilk require fewer surgeries to remove dead bowel tissue associated with NEC. Fewer incidents and reduced severity of illness mean reduced need for intensive care and fewer days in the hospital. A reduced hospital stay may increase better bonding and psychosocial benefits to the mother and baby.

Given that the daily cost of care for one infant in an NICU is approximately ZAR3500 (S. Delport, unpublished data, 2011), the use of breastmilk may lead to substantial cost savings. Reducing NEC incidence from 10% to 1.5% through the use of donor milk should save many thousands of rand daily. Moreover, a lower NEC incidence would have benefits for staff morale and turnover rates.

DOCUMENTING COST-SAVINGS IN SOUTH AFRICA

Data from several countries have shown that providing donor milk to vulnerable infants can reduce morbidity and mortality and in turn reduce health care costs by limiting the time infants spend in the hospital. This finding needs to be applied to the South Africa context. What would the cost-savings be to the nation if human milk banking was integrated into the health care system? To date, this has not been fully investigated. Comprehensive cost-effectiveness studies of human milk banking are needed in South Africa to fully demonstrate the potential benefits of this strategy.

Figure 1. Rates of necrotizing enterocolitis (NEC) and late-onset sepsis among preterm infants fed either breastmilk or preterm formula.



Source: Schanler 1999.[4]

Chester Milk Bank United Kingdom

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