Authors' objectives
Background: Keeping vulnerable preterm infants warm is problematic even when recommended routine thermal care guidelines are followed in the delivery suite. Objectives: To assess efficacy and safety of interventions designed for prevention of hypothermia in preterm and/or low birthweight infants applied within 10 minutes after birth in the delivery suite compared with routine thermal care.

Search methods: We used the standard search strategy of the Cochrane Neonatal Review Group (CNRG). The review was updated in October 2009.

Selection criteria: Trials using randomised or quasi-randomised allocations to test a specific intervention designed to prevent hypothermia, (apart from 'routine' thermal care) applied within 10 minutes after birth in the delivery suite to infants of < 37 weeks' gestational age or birthweight ≤ 2500 g.

Data collection and analysis: We used the methods of the CNRG for data collection and analysis.

Main results: 1) Barriers to heat loss [5 studies; plastic wrap or bag (3), plastic cap (1), stockinet cap (1)]: Plastic wraps or bags were effective in reducing heat losses in infants < 28 weeks' gestation (4 studies, n = 223; WMD 0.68 °C; 95% CI 0.45, 0.91), but not in infants between 28 to 31 week's gestation. Plastic caps were effective in reducing heat losses in infants < 29 weeks' gestation (1 study, n = 64; MD 0.80 °C; 95% CI 0.41, 1.19). There was insufficient evidence to suggest that either plastic wraps or plastic caps reduce the risk of death within hospital stay. There was no evidence of significant differences in other clinical outcomes for either the plastic wrap/bag or the plastic cap comparisons. Stockinet caps were not effective in reducing heat losses.

2) External heat sources [2 studies; skin-to-skin (1), transwarmer mattress (1)]: Skin-to-skin care (SSC) was shown to be effective in reducing the risk of hypothermia when compared to conventional incubator care for infants (1 study, n = 31; RR 0.09; 95% CI 0.01, 0.64). The transwarmer mattress reduced the incidence of hypothermia on admission to NICU in VLBW infants (1 study, n = 24; RR 0.30; 95% CI 0.11, 0.83).

Authors' conclusions: Plastic wraps or bags, plastic caps, SSC and transwarmer mattresses all keep preterm infants warmer leading to higher temperatures on admission to neonatal units and less hypothermia. However, the small numbers of infants and studies and the absence of long-term follow-up mean that firm recommendations for clinical practice cannot be given.


Bibliographic details
McCall Emma M, Alderdice Fiona, Halliday Henry L, Jenkins John G, Vohra Sunita. Interventions to prevent hypothermia at birth in preterm and/or low birthweight infants. Cochrane Database of Systematic Reviews: Reviews 2010; Issue 3

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