A.12 EMOLLIENTS

Recommendation and remarks

RECOMMENDATION A.12 (NEW)

Application of topical oils to the body of preterm or low-birth-weight infants may be considered.
(Conditional recommendation, moderate-certainty evidence)

Remarks

- The recommendation is conditional on shared decision-making with parents; this includes informing parents about the benefits and risks and the need for further research.
- The GDG noted that there were limited data on the type, dose, timing of initiation and duration of oil use. Based on most of the trials included in the evidence review, the GDG suggested that sunflower or coconut oils may be used and that initiation and duration of use may be based on clinical judgement. The GDG also felt that application of oils should be done gently to avoid disrupting skin integrity.
- The GDG decided not to make a recommendation on the use of ointments or creams due to little or no effect on mortality and morbidity (invasive infection, necrotizing enterocolitis, bronchopulmonary dysplasia, retinopathy of prematurity) and no evidence on other critical outcomes.

Background and definitions

Emollients are moisturizing treatments applied topically, i.e. directly to the skin. They include ointments (water-in-oil suspensions), creams (oil-in-water suspensions) and natural vegetable or plant topical oils (e.g. sunflower and coconut oils). The skin of preterm infants is developmentally immature *(141,142)* and can be easily abraded, which can allow entry of pathogenic organisms *(143)*. Topical emollients can improve skin integrity and barrier (protective) functions but they can also disrupt skin integrity, remove normal flora and microorganisms and increase colonization with other microorganisms *(142)*. Emollients also contain fatty acids and other fluids that can be absorbed through the skin *(141)*. However, there have been no recent systematic reviews of the effectiveness of topical ointments, creams or oils in preterm and LBW infants.

Summary of the evidence

OVERVIEW	A.12a Topical oil	A.12b Topical ointment or cream
PICO	**Population** – Preterm and LBW infants **Intervention 1** – Topical oil **Comparator 1** – No topical oil **Outcomes** – All-cause mortality, morbidity, growth, neurodevelopment at latest follow-up	**Population** – Preterm and LBW infants **Intervention 2** – Topical ointment or cream **Comparator 2** – No topical ointment or cream **Outcomes** – All-cause mortality, morbidity, growth, neurodevelopment at latest follow-up
Timing, setting, subgroups	**Timing of the intervention** – Birth to 6 months of age **Setting** – Health-care facility or home in any country or setting **Subgroups** • Gestational age at birth (< 32 weeks, ≥ 32 weeks) • Birth weight (< 1.5 kg, ≥ 1.5 kg)	

Effectiveness: Comparison 1 – Topical oil versus no topical oil

Sources and characteristics of the evidence

For this comparison, the effectiveness evidence was derived from a systematic review of 15 RCTs enrolling a total of 3718 infants *(144)* from nine countries (Bangladesh, Brazil, Egypt, France, Germany, India, the Islamic Republic of Iran and Pakistan). All trials used natural vegetable or plant oils: sunflower (8 trials), coconut (4 trials), and soybean, almond, vegetable and olive oil (1 trial each). The population was very preterm babies (< 32 weeks' gestation) in three trials. The intervention generally commenced within a few days of birth and continued until about 1–4 weeks chronological age or until hospital discharge. The oils were applied 2–6 times each day onto the whole skin surface (except the face and head) by the family or health worker.