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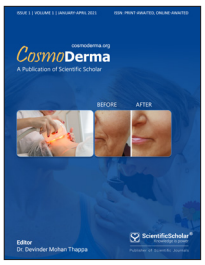

Focus

Neonatal skin care

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The skin of a neonate is radically different from the skin of older children and adults. This creates the need for a specialized and appropriate skin care practice. The primary objectives of neonatal skin care are directed toward decreasing trans-epidermal water loss (TEWL), preventing mechanical and chemical injury to the skin, and avoiding infection.

Transitioning from a sterile *in utero* environment to a pathogen-rich dry environment creates a unique challenge for the neonatal skin. The intactness of the epidermis protects the neonate against damages due to evaporation, percutaneous absorption of drugs, physical damage, and pathogens. The barrier function depends on lipids such as ceramides, cholesterol, and free fatty acids. In neonates, TEWL ranges from 4 to 8 g/m^2/h. In the case of prematurity, the TEWL is inversely proportional to age. The hydration of the stratum corneum increases proportionately with age in neonates.

IMMEDIATELY AFTER DELIVERY

As soon as the baby is born, the baby is placed on the mother's abdomen before cutting the cord or on the chest after cutting the cord.[1] The skin is then wiped clean with a dry, warm cloth. The baby is dressed only in a diaper to maximize skin-to-skin contact between the baby and the mother. The baby and mother should be covered with pre-warmed blankets for at least an hour after birth. This promotes breastfeeding and prevents hypothermia. The WHO strongly recommends skin-to-skin care for all mothers and neonates without complications. The baby should be wrapped in a warm, soft, and dry cloth when this is not feasible. The ambient temperature of the room in which the baby is placed should be 25–28°C without any draught.

Vernix caseosa is a protective biofilm that provides mechanical protection against maceration by amniotic fluid and bacterial infections.[2] It is a natural moisturizer with anti-infective, antioxidant, and wound-healing properties. Vernix has been shown to increase surface hydration on application to normal adult skin. It should not be removed from the neonate. Vigorous rubbing of the neonate's skin should be avoided. A wet cloth may be used in case of blood or meconium staining of the skin. In neonates of mothers with HIV or hepatitis B infection, early removal of vernix caseosa is advisable to decrease the risk of transmission.

FIRST BATH

The child's first bath should be delayed until the vital signs and body temperature of the neonate have remained stable for 4–6 h. It can be delayed until 24 h after birth and shouldn't be done before 6 h. This is because of the risk of neonatal hypothermia with bathing. Rewarming can be done using skin-to-skin contact under a protective covering. In resource-poor settings, postponing

the first bath for 72 h decreases neonatal mortality. However, blood and meconium need to be gently removed after birth.

Immersion or tub bathing is used to clean the neonate. It also acts as an opportunity for close tactile interaction between the neonate and the mother. The water in the tub should be up to the hip of the baby. The optimum temperature of the water is 37–38°C. Mothers should be sensitized regarding the need to accurately measure the temperature as touch sensation is inadequate to prevent scald injuries. The bath duration should be limited to 5–10 min every alternate day.[3] This is because of the risk of hyperhydration resulting in increased skin fragility. The child should be gently toweled and covered immediately after the bath. Neonates of mothers with HIV or hepatitis B should be bathed at the earliest when the neonate is hemodynamically stable with aseptic precautions.

A syndet is preferred to a soap to cleanse the baby. Soaps tend to damage the epidermal barrier, and it takes about an hour for the restoration of skin pH after their use. Syndet liquid cleansers are preferred. Those with slightly acidic or neutral pH are preferred.

UMBILICAL CORD CARE

Umbilical cord stump usually dry out and fall off spontaneously between 5 and 10 days of birth. It is a significant focus for neonatal infection and mortality. The recommendations for appropriate umbilical cord care are proper hand hygiene, cutting the cord with a sterile instrument, and washing the cord stump with clean water or soap. Alcohol or topical antiseptics delay the separation of the umbilical cord by 2 days. Isopropyl alcohol, hexachlorophene, and neomycin are to be avoided. The risk of near-complete percutaneous absorption of alcohol in neonates with resultant systemic toxicity necessitates its avoidance in neonates. Bandages should not be applied on the stump, and the diaper should be worn below it.

DIAPER CARE

Persistently moist skin can lead to maceration, rendering it more susceptible to irritation. Hence, napkins should be changed every 2 h in neonates and every 3–4 h in infants. It should be changed at least after each feed. Water and wash cloth are the traditional standard of diaper care. Moistened clothes or cotton balls soaked in lukewarm water may be used to clean the diaper area, followed by patting the area dry using a dry cloth. Mineral oil application over the diaper area may provide a barrier effect. Diaper dermatitis may be treated using barrier creams such as zinc oxide or petrolatum-based preparations. Superabsorbent napkins are superior to cloth napkins in preventing napkin dermatitis. However, dermatologists need to make the parents aware that disposable infant wipes carry a risk of allergic contact dermatitis due to preservatives and fragrances present in them.

SCALP CARE

The first hair wash is given after the umbilical cord falls. Cradle cap of the scalp may be treated by applying mineral oil over the crust, followed by removal after 2–3 hours. Baby shampoos free of fragrance may also be used. Hair wash can be given once or twice a week.

SKIN CARE

Dermatologists and parents should remember that the mere fact that a product is advertised for children does not mean that there are no effects. Despite their place in the traditional care of neonates, baby powders containing talcum or corn starch are not suitable for application over oozing umbilical stumps.

Talcum powders are not to be used in neonates. There is a risk of accidental aspiration resulting in potentially life-threatening respiratory disease. If the parent is adamant about its usage, the powder may be smeared on the parent`s hands, followed by gentle application on the neonate's skin. Puffs should not be used due to the risk of accidental inhalation. Talcum powders should not be applied in the groin, neck, cubital fossa, or popliteal fossa.

On delivery, the neonate is transferred from a 100% humid environment *in utero* to a dry ambient environment. Because of this, there is a period of transitory postnatal desquamation in the early days. Complete maturation of the epidermal barrier in neonates happens throughout the 1st year of life. Glycerol (5–20%) is the preferred moisturizer for up to 2 years of age. Urea causes skin irritation with a stinging effect in neonates and should be avoided.

Dermatologists should be aware of the basics of neonatal skin care to facilitate appropriate care for the youngest of our patients and to allay the parents' fears regarding the same.

Declaration of patient consent

Patient's consent not required as there are no patients in this study.

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Conflicts of interest

There are no conflict of interest.

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