

EMOLLIENT APPLICATION CHANGES SKIN BARRIER AND MICROBES IN INFANTS AT A RISK FOR DEVELOPING ATOPIC DERMATITIS

Introduction

Atopic dermatitis is a complex multifactorial disease, including bacterial skin dysbiosis and defective skin barrier. It is characterized by impaired skin barrier function which may precede clinical skin lesions in infants.

Cultivation studies show that *Staphylococcus aureus* colonizes the lesional and non-lesional skin of AD patients and the significance of altered bacterial colonization for AD is demonstrated by the positive correlation between AD severity and density of cutaneous *S. aureus* colonization. Skin emollients rehydrate the skin, reduce the severity of AD, prevent the development of eczema and improve skin barrier function, thereby forming an integral component of AD treatment. In addition, emollient and its components alter skin bacterial growth and survival.

Aim

To determine the impact of emollients in infants at risk for developing atopic dermatitis.

Study design

6-month-old infants with a family history of atopy randomized were selected to receive or not receive emollients. Comparison of samples based on skin barrier parameters, AD development, and bacterial 16S ribosomal RNA gene sequences of cheek, dorsal and volar forearm samples were done.

The study was conducted on a total of 23 infants out of which 11 received emollient treatment once daily (emollient group) and 12 did not receive emollient treatment daily (control group).

Results

- The *Streptococcus salivarius* proportion was higher in the emollient versus control group at all sites
- The number of bacterial taxa in the emollient group was higher than in the control group at all sites
- The emollient group had a lower skin pH than the control group
- *S. salivarius* proportion appeared higher in infants without AD compared to infants with AD
- Cheek samples in both the emollient and control groups had the fewest number of different bacterial taxa as compared to the dorsal forearms and volar forearms
- *Staphylococcus aureus* and *Streptococcus salivarius* proportions are inversely correlated with the severity of atopic dermatitis

Conclusion

The decrease in skin pH and increase in *S. salivarius* to the preventive effects of emollients in high proportion after long-term application of emollient risk infants. in infants at a risk for developing AD contributes



Key take aways

- 👉 The lower skin pH and immunomodulatory effects of *S. salivarius* may contribute to the therapeutic effects of emollient use in AD patients
- 👉 Proportion of *Streptococcus salivarius* is higher in infants due to long-term application of emollients
- 👉 Proportions of *Streptococcus salivarius* and *Staphylococcus aureus* are inversely correlated with the severity of atopic dermatitis
- 👉 Emollient application positively alters skin barrier and microbes in infants at risk for developing AD positively