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SALIVARY CORTISOL LEVELS IN PREPUBERTAL CHILDREN USING INHALED CORTICOSTEROIDS WITH OR WITHOUT CONCURRENT INTRANASAL CORTICOSTEROIDS

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Background: Inhaled corticosteroids (ICS) and intranasal steroids (INS) are frequently co-administered in children with asthma and rhinitis. In contrast to monotherapy with ICS or INS, little is known about the safety of concurrent use of topical steroids on HPA axis function in prepubertal children.

Objective: Comparison of morning salivary cortisol levels in prepubertal children using maintenance treatment with ICS with and without concurrent use of INS to a steroid naïve control group.

Methods: Cross-sectional observational study in prepubertal children (6-12 years) using ICS alone (n=41) or in combination with INS (n=22), compared to a control group with no steroid treatment (n=28). Morning salivary cortisol levels were determined from saliva samples collected at home.

Results: The morning salivary cortisol levels of prepubertal children using ICS (median 5.1 nmol/l; 95% CI 4.1 to 7.6) or a combination of ICS and INS (4.8 nmol/l; 4.6 to 8.1) were comparable, but significantly reduced compared to the steroid naïve control group (8.9 nmol/l; 8.0 to 11.3). There was no correlation between salivary cortisol level and cumulative daily dose of topical steroids.

Conclusion: Salivary cortisol levels in prepubertal children using ICS, with or without concurrent use of INS, were comparable. However, salivary cortisol levels were significantly reduced compared to steroid naïve controls, irrespective of the cumulative daily dose of topical steroids.

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WATER CONTENT IN INFANT STRATUM CORNEUM

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Objective: To determine the water content of infant stratum corneum (SC) as compared to adult and identify the sources of differences.

Methods: We have acquired in vivo Raman spectra from the forearm skin of 15 infants (3-24 months) and their biological mothers. The Raman spectra were analyzed for the water content, the thickness of SC, and the concentration of components of natural moisturization factor (NMF). We also collected skin conductance data on the forearm of 67 infants of the same age and their mothers.

Results: As previously reported conductance values and water concentration profiles are significantly higher in infant skin compared to adult. In agreement with published data from confocal microscopy, Raman data also show that infant SC is 30% thinner than adult. Even after accounting for the differences in SC thickness our data show that water content in the top layers of the SC is still significantly higher in infants compared to adults (20% more at the top quarter of SC). NMF analysis showed that although adults have more amino acids, infants have significantly more lactate in their SC.

Conclusions: Infant SC contains more water than adult. Lactate may be responsible for at least part of this increased water content. Water stored in microrelief lines may be an additional explanation for the higher skin conductance values in infant skin.

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HELICOBACTER PYLORI INFECTION IN ALLERGIC CHILDREN

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Background and aims: Studies have suggested that *Helicobacter pylori (H.pylori)* infection could