Atopic eczema in children

Thomas KS, Armstrong S, Avery A, Po ALW, O'Neill C, Young S, et al. Randomised controlled trial of short bursts of a potent topical cortico steroid versus prolonged use of a mild preparation for children with mild or moderate atopic eczema. *BMJ* 2002;324:768-71.

Background: Atopic eczema is a common problem, affecting an estimated 14%–22% of children in Canada.[1] The condition follows a chronic course and has traditionally been managed with topical corticosteroids. Prolonged use of topical corticosteroids can cause some thinning of the skin, which is both a worry to parents and children and a cause of poor compliance.

Question: Would a 3-day burst of treatment with a potent topical corticosteroid be more effective than continuous treatment with a topical low-dose preparation, without causing an increase in thinning of the skin?

Methods: Children 1 to 15 years of age were recruited from a hospital and 13 general practices in the United Kingdom. All had mild or moderate atopic eczema within the month before trial entry. Children with severe eczema, known sensitivity to study treatments, or eczema confined to the face or diaper area were excluded. Children included in the study were randomly assigned (by computer-generated blocks of 4) into 1 of 2 treatment groups: those in the mild treatment group received 1% hydrocortisone ointment twice daily for 7 days. Those in the potent treatment group received 0.1% betamethasone valerate twice daily for 3 days, followed by a base emollient only (white soft paraffin) for 4 days. Both groups repeated the treatment cycles as needed over the 18 weeks of the study.

The primary outcomes (number of scratch-free days and number of relapses) were based on reports of scratching recorded in a daily diary. Patients or parents responded to the question "How much has your eczema made you scratch today?" using a 5-point scale (1 = not at all, 5 = all the time). Scores of 2 or less were considered to represent scratch-free periods. Scores of 2 or more for 3 consecutive days were considered to represent relapses. The secondary outcomes were median duration of relapses, number of undisturbed nights, disease severity, quality of life and proportion of treatment failures in each group.

Results: Of the 2146 eligible patients invited to participate, 379 replied. A total of 278 were assessed for possible inclusion in the study, of whom 71 were excluded for prespecified reasons, mainly because there was no atopic eczema at the time of recruitment. Nine patients did not return the diaries.

No differences in outcomes were found between the 2 groups. The median number of scratch-free days was 118.0 in the mild treatment group and 117.5 in the potent treatment group. The number of relapses per patient ranged from 0 to 9 and was also similar between the 2 groups. Symptoms worsened in 9 children in the mild treatment group and 5 in the potent treatment group. Two children in the potent treatment group reported spots or rashes, and 1 reported hair growth; another child in the same group had viral encephalitis during the study period.

None of the patients had any clinical evidence of thinning of the skin. Although only half of the patients underwent ultrasound scanning to measure skin thickness, no important differences in measurements were detected between the 2 groups. The authors noted that the sites scanned (elbow, knee creases, lateral aspect of forearm and back of the calf), time of day, temperature and humidity all affect skin thickness. They acknowledged that interpretation of the ultrasound data is problematic in the context of a clinical trial.

Commentary: Eczema is a troublesome condition commonly seen in primary care practices. This study shows that a short, 3-day burst of a potent topical corticosteroid is as effective as the standard 7-day treatment with a mild corticosteroid. Unfortunately, the authors do not comment on the patients' and parents' perceptions of skin thinning, one of the main reasons for noncompliance. The majority of the study subjects were chosen from among patients attending general practices; therefore, the types and severity of eczema managed should reflect similar patients seen in other primary care settings. Nonetheless, the subjects were volunteers and may not be representative of all patients with eczema seen in office or hospital practices.

Practice implications: The study clearly shows that a potent topical corticosteroid ointment applied for short periods is as effective as standard therapy with a milder preparation. For some patients, particularly those who find longer treatment periods inconvenient, the stronger preparation could be tried.

John Hoey
CMAJ

Reference

1. Habbick BF, Pizzichini MMM, Taylor B, Rennie D, Senthilselvan A, Sears MR. Prevalence of asthma, rhinitis and eczema among children in 2 Canadian cities: the International Study of Asthma and Allergies in Childhood. *CMAJ* 1999;160(13):1824-8. Available (pdf format): www.cmaj.ca/cgi/reprint/160/13/1824.pdf.