Two regimens of dexamethasone versus prednisolone for acute exacerbations in asthmatic Egyptian children.

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Background & Objectives:

- Prednisolone is the most commonly used corticosteroid in treatment of asthma exacerbation, however, oral dexamethasone demonstrates similar bioavailability with a longer half-life.
- **The study compares different doses of oral dexamethasone (0.3 mg/kg single dose, 0.6 mg/kg/d for 2 days) and oral prednisolone (1.5 mg/kg/d for 5 days) in controlling asthma exacerbation.**

Methods: Double-blind, placebo-controlled, quasi-RCT included 60 children aged 2–11 years divided into three groups (20 in each). Group I received a single dose of oral dexamethasone 0.3 mg/kg (maximum 12 mg), group II received 0.6 mg/kg/d of oral dexamethasone for 2 days (maximum 16 mg/d) and group III received 1.5 mg/kg/d oral prednisolone for 5 days (maximum 60 mg/d). Primary outcomes were changes in Paediatric Respiratory Assessment Measure (PRAM), eosinophil count and serum IgE on day 5.

ACADEMIC P.E.A.R.L.S

Pediatric Evidence And Research Learning Snippet

Low-dose dexamethasone *vs* prednisolone in acute asthma exacerbation: Is there any difference?

Results:

- No significant difference in PRAM scores on day 5 (p = 0.94).
- No significant difference between groups for relapse within 5 days [RR 1.0 (95% CI 0.33 to 3.00), p = 0.56].
- No significant difference between groups in the rate of vomiting, weight gain or blood sugar on day 5.

Conclusions: Single-dose dexamethasone was at least as effective as 5-day course of prednisolone in controlling asthma, while dexamethasone for 2 days was non-inferior to 5 days of prednisolone in children with asthma exacerbation.

Key message: A single oral dose of 0.3 mg/kg dexamethasone for children presenting acutely with asthma is non-inferior to 5 days of oral prednisolone.

EXPERT COMMENT

"This study shows that a single low-dose (0.3 mg/kg) oral dexamethasone has similar efficacy and safety profile as a 5-day course of prednisolone in acute asthma exacerbation. The finding is relevant because of the following: good compliance, better tolerability, and a lesser cumulative dose with dexamethasone." The study findings are also in accordance with a recent meta-analysis that found no significant difference between a single or two doses of dexamethasone.

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With warm regards,

Reference

Elkharwili DA, Ibrahim OM, Elazab GA, Elrifaey SM. Two regimens of dexamethasone versus prednisolone for acute exacerbations in asthmatic Egyptian children. Eur J Hosp Pharm. 2020 May;27(3):151-156.