Specific Question:

In children under 7 years of age does the administration of Dexamethasone result in better outcomes for Croup than the administration of Prednisolone?

Clinical bottom line

Dexamethasone is not statistically or clinically superior to Prednisolone in reducing Croup symptom scores at 6 hours after admission but is superior to Prednisolone at reducing the risk of re-consultation for the same episode of Croup. Dependent on consultation patterns, and whether multiple doses can be used from the same bottle of Dexamethasone, there may also be cost savings associated with a switch to Dexamethasone administration.

Why is this important?

There is variability in current practice on the treatment for the childhood condition ‘Croup’. Clinicians suggest the use of prednisolone is often based on the ease of availability rather than evidence of clinical effectiveness.

Search time frame (e.g. 2006-2016)

Inception of searched databases to March 2016

Inclusion Criteria

CAT Lead: Vicky Shone and John Edwards
Email:a.finney@keele.ac.uk

Date CAT completed: July 2016
Date CAT to be reviewed: July 2018
### Getting Evidence into Clinical Practice:
**General Practice Nurse Evidence Based Practice (CAT Group)**
**Date:** July 2016

<table>
<thead>
<tr>
<th>Description</th>
<th>Search terms</th>
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<tbody>
<tr>
<td><strong>Population and Setting</strong></td>
<td>Children 0-6 years of age</td>
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<tr>
<td><strong>Intervention or Exposure</strong></td>
<td>Oral Dexamethasone (single dose)</td>
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<td><strong>Comparison, if any</strong></td>
<td>Oral Prednisolone (single dose or with second dose if residual symptoms of stridor are still present).</td>
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<td><strong>Outcomes of interest</strong></td>
<td>Reduction of Croup symptom scores at 6 hours, reduced rates of consultation, reduced hospital admission.</td>
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<td><strong>Types of studies</strong></td>
<td>RCTs or Systematic Reviews</td>
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### Routine Databases Searched
Web of Science, Clinical Knowledge Summaries, Cochrane and EMBASE, Medline, CINAHL

**Date of search** - Searches undertaken by Andrew Finney and Rachel Lewis (Librarian). March 2016

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**Email:** a.finney@keele.ac.uk  
**Date CAT completed:** July 2016  
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Results of the search

Table 1- Detail of included studies

<table>
<thead>
<tr>
<th>First Author, year and type of study</th>
<th>Population and setting</th>
<th>Intervention or exposure tested</th>
<th>Study results</th>
<th>Assessment of quality and comments</th>
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<tbody>
<tr>
<td>Sparrow and Geelhoed, 2006, Australia</td>
<td>Convenience sample of 133 children presenting to a single emergency department with mild to moderate croup.</td>
<td>Double-blind, randomised equivalence study. Patients received a single dose of 0.15 mg/kg dexamethasone or 1 mg/kg prednisolone</td>
<td>Five out of 68 (7%) children who had received dexamethasone returned vs 19/65 children who had received prednisolone. No statistical difference between groups in terms of time spent in the emergency department, number admitted, use of epinephrine, duration of croup or viral symptoms</td>
<td>Satisfactory RCT</td>
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<td>Included patients up to the age of 12 years, although very uncommon for older children to be affected</td>
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Summary

Two studies compared Dexamethasone to Prednisolone. While there was no significant difference in Croup score, children randomized to Dexamethasone were significantly less likely to have a return visit.

Dependent on consultation patterns, and whether multiple doses can be used from the same bottle of Dexamethasone, there may also be cost savings associated with a switch to Dexamethasone administration.

Implications for Practice/research

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Date CAT completed: July 2016
Date CAT to be reviewed: July 2018
Clinical Commissioning Groups should assess the feasibility of use of multiple doses of Dexamethasone from a single container and consider local guidelines to promote its use in preference to Prednisolone.

What would you tweet? (140 characters)

Using Dexamethasone in place of Prednisolone for Croup can potentially reduce re-consultations and provide cost savings.

References