



EVIDENCE SUMMARY:

Croup

WHAT IS IT?

Croup is a common respiratory illness caused by a viral infection of the upper airway. Accompanied by a barking cough and respiratory distress, this illness is most common in children aged 3 months to 6 years, peaking at 2 years of age.

EVIDENCE SUMMARY

The purpose of this document is to describe the effectiveness of four treatment options, based on a 2012 Overview of Reviews.*

Some children with serious illness may be admitted to the hospital. However, this summary describes treatment outcomes in outpatients. These are children who are cared for at a clinic or at the emergency department, but who are not admitted to the hospital.

The treatments were compared using four outcomes to examine which treatment was the most effective. The outcomes were:

- » Did treatment reduce respiratory distress?
- » Did treatment reduce hospital admissions or re-admissions?
- » Did treatment reduce the risk of needing intubation?
- » Is the treatment associated with any adverse effects?

TREATMENT SCENARIO 1

Glucocorticoids vs Placebo

RESPIRATORY DISTRESS (CROUP SCORE)

Glucocorticoids provided an improvement in croup scores at 6 hours and 12 hours after first dosage. At 24 hours, there was no difference in the croup score compared to the placebo.

HOSPITAL ADMISSIONS / RE-ADMISSIONS

Glucocorticoids reduced the need for hospital admission and length of stay. They reduced the number of patients who needed to return for medical care.

NEED FOR INTUBATION

There was no difference in need for intubation between patients treated with glucocorticoids or placebo.

ADVERSE EFFECTS

There were no data collected in the studies on adverse effects due to glucocorticoid administration.

TREATMENT SCENARIO 2

Epinephrine vs Placebo

RESPIRATORY DISTRESS (CROUP SCORE)

Epinephrine provided an improvement in croup scores at 30 minutes after first dosage. At 2 hours and 6 hours, there was no difference in croup score compared to placebo.

THE FINDINGS

TREATMENT SCENARIO 1

Glucocorticoids were effective at reducing the length of stay for patients who had to be hospitalized.

TREATMENT SCENARIO 2

Epinephrine was determined to be the best treatment for fast and short term relief. However, due to variations and difficulties of administering its different forms to children, and its risk of side effects, epinephrine is not the most effective treatment for croup.

TREATMENT SCENARIO 3

Studies on heliox have come up short on determining whether it could be an effective treatment for croup. More studies are needed to determine its true effectiveness as a treatment.

TREATMENT SCENARIO 4

The available evidence does not support humidified air for treatment of croup.

* The information presented in this evidence summary is based on:

Bjornson et al. The Cochrane Library and the Treatment of Croup in Children: An Overview of Reviews. Evidence-Based Child Health 5: 1555-1556 (2012).

Alberta Medical Association, Diagnosis and Management of Croup, Summary of the Alberta Clinical Practice Guidelines, Update 2008. www.topalbertadoctors.org

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(TREATMENT SCENARIO 2 CONTINUED)

HOSPITAL ADMISSIONS / RE-ADMISSIONS

There was no difference in the number of patients who needed to return for medical care compared to placebo.

NEED FOR INTUBATION

There was no difference in the number of patients needing intubation.

ADVERSE EFFECTS

There were no adverse effects due to epinephrine reported in the studies.

TREATMENT SCENARIO 3

Heliox vs Placebo

There was not enough data to determine if heliox is effective.

TREATMENT SCENARIO 4

Humidified Air vs Placebo

The evidence available shows that humidified air is not effective in children with croup.

SUMMARY

Treatment with glucocorticoids is the most effective overall. Compared to placebo, they were the treatment that resulted in the best croup score between 6 hours and 12 hours. They also resulted in fewer return visits for medical care and shorter length of stay in the emergency department.

Epinephrine is effective to quickly reduce respiratory symptoms.