EVIDENCE SUMMARY:

Bronchiolitis

WHAT IS IT?

Bronchiolitis is a viral infection in the lower airways causing swelling and congestion in the air passages. Accompanied by coughing, wheezing, respiratory distress, feeding and sleeping disturbances, this illness affects children in their first year of life.

EVIDENCE SUMMARY

The purpose of this document is to describe the effectiveness of five treatment options, based on a 2011 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 overall. These areas were:

» Did treatment reduce hospitalization rates?

» Did treatment reduce the length of stay in the emergency department (ED)?

» Did treatment reduce the clinical severity of the infection?

» Is the treatment associated with any adverse effects?

TREATMENT SCENARIO 1

Glucocorticoids vs Placebo

HOSPITALIZATION RATE

There was no difference in hospitalization rates on day 1 or within 7 days for children given glucocorticoids compared with those given placebo.

LENGTH OF STAY (IN THE ED)

There was no difference in the length of stay in the ED for children given glucocorticoids compared to those given placebo.

CLINICAL SEVERITY SCORES

There was no difference in clinical severity scores at 60 minutes or 120 minutes for children given glucocorticoids compared with those given placebo.

ADVERSE EFFECTS

There were no adverse effects (vomiting, hypertension, bleeding, pallor or flushing, and tremor) for glucocorticoids compared with placebo.

TREATMENT SCENARIO 2

Epinephrine vs Placebo

HOSPITALIZATION RATE

Epinephrine provided a decrease in hospitalization on day 1. However, there was no difference in hospitalization within 7 days compared to the placebo.

LENGTH OF STAY (IN THE ED)

There were no data comparing epinephrine with placebo.

CLINICAL SEVERITY SCORES

There was a decrease in score at 60 minutes and at 120 minutes for epinephrine compared with placebo.

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THE FINDINGS

TREATMENT SCENARIO 1

There is **little compelling evidence or data to recommend glucocorticoids** as a treatment for bronchiolitis, unless paired with epinephrine which shows a reduction in hospitalization within 7 days.

TREATMENT SCENARIO 2

There is evidence that treatment with epinephrine can reduce the need for hospitalization. Observation is needed after giving epinephrine to continue to monitor the child's symptoms for 2-3 hours.

TREATMENT SCENARIO 3

There was **no compelling evidence to recommend bronchodilators (other than epinephrine)** as a treatment for bronchiolitis.

TREATMENT SCENARIO 4

There is some evidence that combining epinephrine with glucocorticoids may improve the longer-term outcome of admission to hospital within 7 days.

TREATMENT SCENARIO 5

There was **no compelling evidence or data to recommend hypertonic saline** as a treatment for bronchiolitis.

SUMMARY

Children in the ED can be treated with epinephrine and observed to monitor changes in symptoms for 2-3 hours.

There is not enough evidence to recommend treatment with glucocorticoids and bronchodilators (other than epinephrine).

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

Bialy L et al. The Cochrane Library and the Treatment of Bronchiolitis in Children: An Overview of Reviews. Evidence-Based Child Health 6: 258-275 (2011).

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(TREATMENT SCENARIO 2 CONTINUED)

ADVERSE EFFECTS

There were no data comparing epinephrine with placebo. There is no evidence of increased return to the ED in patients who received epinephrine compared to placebo.

TREATMENT SCENARIO 3

All bronchodilators vs Placebo

The evidence available shows that when all bronchodilators are combined (ie. pure beta-agonists or medications with alpha and beta-agonist effects such as epinephrine or salbutamol etc.), they are not effective in children with bronchiolitis.

TREATMENT SCENARIO 4

Glucocorticoids + Epinephrine vs Placebo

HOSPITALIZATION RATE

There was a significant decrease in hospitalization rates up to 7 days for children treated with glucocorticoids and epinephrine combined compared with placebo.

LENGTH OF STAY (IN THE ED)

There were no data comparing glucocorticoids and epinephrine with placebo.

CLINICAL SEVERITY SCORES

There was a decrease in score at 60 minutes for glucocorticoids and epinephrine combined. No data were available for clinical scores at 120 minutes.

ADVERSE EFFECTS

There were no differences in adverse effects (vomiting, bleeding, pallor or flushing, and tremor) for glucocorticoids and epinephrine compared with placebo.

TREATMENT SCENARIO 5

Hypertonic Saline vs Placebo

There were not enough data to determine if hypertonic saline is effective.