# Evidence Update

Summary of a Cochrane Review

Child Health Series

## Should vitamin A be given routinely to children with pneumonia unrelated to measles?

There is not enough evidence to recommend routine vitamin A in children with pneumonia unrelated to measles.

#### **Background**

Pneumonia causes many deaths in children under five. Vitamin A reduces mortality in children with pneumonia and measles together. This review examines whether a similar effect occurs with non-measles pneumonia.

#### **Inclusion** criteria

#### **Studies:**

Randomized controlled trials (RCTs) and quasi-RCTs.

#### **Participants:**

Children under 15 years old with pneumonia unrelated to measles.

#### Intervention:

Intervention: vitamin A plus standard treatment.

Control: standard treatment, with or without placebo.

#### **Outcomes:**

Primary: death.

Other: signs of pneumonia (including fever, chest x-ray findings); clinical severity (including oxygen saturation, bronchial breathing, duration of hospitalization); adverse events following vitamin A intake.

#### **Results**

- Five RCTs and one quasi-RCT were included, involving 1740 infants and children. Allocation concealment was adequate in three trials.
- No statistically significant difference was detected between vitamin A and placebo in relation to death during hospital stay (1146 participants, 3 trials), duration of fever (958 participants, 3 trials), or antibiotic failure (472 participants, 1 trial).
- Three trials reported minor and transitory adverse effects of Vitamin A.

Adapted from Ni J, Wei J, Wei T. Vitamin A for non-measles pneumonia in children. *Cochrane Database of Systematic Reviews* 2005, Issue 3. Art. No.: CD003700. DOI: 10.1002/14651858.CD003700.pub2. [New search July 2007] *Evidence Update* published in June 2010 (update of *Evidence Update* published in May 2006).

#### Vitamin A compared with placebo: deaths during hospital stay Odds Ratio M-H,Fixed,95% CI Vitamin A n/N Control n/N Odds Ratio M-H,Fixed,95% CI Study or subgroup Weight 8/341 Fawzi 1998 13/346 60.8 % 1.63 [ 0.66, 3.97 ] 2/239 0.97 [ 0.14, 6.98 ] Nacul 1999 2/233 157% Rodriguez 2005 2/145 3/142 23.4 % 0.65 [0.11, 3.94] **Total (95% CI)**730 Total events: 17 (Vitamin A), 13 ( Control) Heterogeneity: Chi² = 0.89, df = 2 (P = 0.64); I² = 0.0% Test for overall effect: Z = 0.69 (P = 0.49) 716 100.0 % 1.29 [ 0.62, 2.69 ] 10 100 Favours control 0.01 0.1 Favours vitamin A

#### **Authors' conclusions**

### Implications for practice:

There is insufficient evidence of clinical benefit to recommend vitamin A routinely in children with pneumonia unrelated to measles.

#### Implications for research:

The small size of the trials and variability in the measured outcomes limited the power of the meta-analyses. Large, well-designed trials examining the effectiveness and safety of vitamin A for children with non-measles pneumonia are needed. Trials should evaluate the effects of vitamin A in children at both high and low risk of deficiency, and examine different vitamin A doses to optimise possible benefits for children with non-measles pneumonia.





