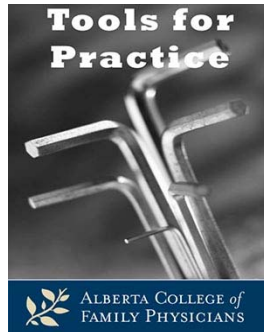


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Are Acetaminophen and Ibuprofen Equivalent in the Treatment of Paediatric Fever?

Clinical Question:

If we provide a recommendation regarding the treatment of paediatric fever, is acetaminophen or ibuprofen superior?

Evidence:

A meta-analysis and recent randomized controlled trial (RCT) provide some guidance:

- Meta-analysis of Ibuprofen vs Acetaminophen¹
 - o 10 trials, 1078 patients
 - o Dose: ibuprofen 5-10 mg/kg and acetaminophen 10-15 mg/kg
 - o Outcome:
 - Ibuprofen statistically superior at 2, 4 and 6 hours.
 - At 4-6 hours, approximately 15% more ibuprofen patients will have fever reduction (number needed to treat 7).
- PITCH: RCT comparing ibuprofen 10 mg/kg q6-8 hours, acetaminophen 15 mg/kg q4-6 hours or combination of both.²
 - o 156 children (age 6 months to 6 years)
 - o Outcomes (statistically significant)
 - Time without fever in first 4 hours: Combination superior to acetaminophen by 55.3 mins but not ibuprofen.
 - Ibuprofen and combination clear fever faster.
 - Combination had reduced fever time in first 24 hours
 - acetaminophen 4.4 hours more
 - ibuprofen 2.5 hours more
 - o Overdosing of medications reported in 33 (21%) children.
 - o Authors recommended ibuprofen:
 - 1) Ibuprofen superior to acetaminophen,
 - 2) Combination only slightly better to ibuprofen in a few outcomes,
 - 3) Possible risk of excess dosing with a combination.

Context:

- Debate:
 - o No evidence that fever itself is harmful (theorized may be part of immune response).³
 - o Antipyretics not shown to prevent febrile seizures.⁴
 - o No evidence that treating fever in mild infections is harmful (unless overdosed).

- If treated, goal should likely be comfort⁵ (although no studies have investigated “comfort” in fever).
- Adverse events of ibuprofen as compared to acetaminophen:
 - Asthma: Compared to acetaminophen, ibuprofen carries no increased risk or perhaps slightly lower⁶ (may relate to possible slight increase with acetaminophen²)
 - Reye Syndrome: No increased risk^{7,8}
 - GI Effect & Renal: No evidence of risk.⁹ Canadian Paediatric Society advises against ibuprofen if a child is not “drinking reasonably well.”⁵
 - “Systemic” Reaction: No evidence of risk⁷

Bottom-line: Treatment of paediatric fever is debated and should be discussed with parents/patients. If clinicians are going to recommend a treatment, ibuprofen offers superior fever reduction with no increase in adverse events.

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Tools for Practice is a biweekly article summarizing medical evidence with a focus on topical issues and practice modifying information. It is coordinated by G. Michael Allan, MD, CCFP and the content is written by practising family physicians. Archived articles are available on the Toward Optimized Practice and ACFP websites.

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