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NSAIDs and Upper Respiratory Infections April 21, 2020

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Do NSAIDs affect the duration of upper respiratory infection?

A Cochrane Systematic review including 9 trials (n=1,069) of NSAIDs for the common cold found they did not significantly reduce the total symptom score (SMD -0.40, 95% CI -1.03 to 0.24) or duration of colds. The effect on pain relief (headache, ear pain, and muscle and joint pain) was significant.

Five studies assessed adverse effects. The pooled analysis for overall side effects suggested they were three-time more likely (risk ratio (RR) 2.94, 95% CI 0.51 to 17.03), but this effect was not significant. Adverse effects included gastrointestinal adverse effects and lethargy/drowsiness, feeling hyperactive, feeling more awake, flushed face, difficulty sleeping, light-headedness and dry mouth

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Does the use of NSAIDs worsen outcomes in respiratory infections?

We found five studies that link the use of NSAIDs to worsening outcome, all are observational and are difficult to interpret as they may suffer from confounding by indication. patients with more severe disease and more severe symptoms may take more NSAIDs which does not necessarily cause the disease. All five studies suggest that NSAIDs worsen outcomes, which reinforces the need to take the lowest effective dose for the shortest period of time.

1. A small prospective observational study (n=57) reported that NSAIDs for >6 days and the presence of immunosuppression prior to admission were associated with prolonged hospitalization. Patients that received NSAIDs prior to hospitalization used them for a mean of 4.4 days prior to admission.
2. In a cohort of 90 consecutive patients with Community-Acquired Pneumonia (CAP) admitted to one ICU over a four year period, 32 (36%) had taken NSAIDs prior to hospital referral. Patients taking NSADS were younger, had fewer comorbidities and a longer duration of symptoms before referral. They more often pleural empyema and lung cavitation complications (37.5% vs 7%; P = .0009), and had higher rates of bacteremia (69% vs 27%, P = .009).
3. In a study of 221 patients with CAP 40 (18%) developed a pleuropulmonary complication. NSAIDs intake prior to admission was reported in 24 patients (11%) who were younger (51 vs. 67yrs), had fewer comorbidities (60 vs. 25%), and had a longer time between the first symptoms of CAP and the start of antibiotic therapy (6.1 vs. 2.8 days; p=0.001). They also had higher rates of pleuropulmonary complications (33 vs. 16%; p = 0.048).

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4. NSAIDs may also mask initial symptoms and delay antimicrobial therapy. A review of medical records of 106 confirmed patients with pneumococcal CAP found 20 received NSAIDs 2 to 6 days before admission. NSAIDs exposed patients were younger (43 vs 62 years), had increased complicated pleural effusions rages (20% vs 2.3%; P = .01), and required more noninvasive ventilatory support (25% vs 4.6%; P = .003).
5. A multicenter case-control study in 8 ICUs of 152 adult patients admitted for severe sepsis or septic shock due to bacterial community-acquired infection found that in patients using NSAIDs (27%) The average median time to the prescription of effective antibiotic therapy was longer for NSAID users (6 days, 95% CI = 3 to 7 days) than for nonusers (3 days, 95% CI = 2 to 3 days; *P* = 0.02).

Verdict: There is a need for caution when using NSAIDs in the context of acute respiratory infections (ARI). Pre-existing medications and conditions need to be taken account of when deciding to prescribe NSAIDs for symptomatic ARI. The lowest effective dose should be prescribed for the shortest period of time. Parenteral use of NSAIDs during an ARI should be avoided.

NSAIDs do not significantly reduce total symptoms or duration of respiratory infections.

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