



MasksUnited.org

NSAID, URIs and Thrombosis

April 21, 2020

CEBM

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Carl Heneghan, Jon Brassey

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.

Non-steroidal anti-inflammatory drugs (NSAIDs) are widely used by patients with ARI or common cold for pain and fever relief. Their use needs to be balanced with the risks and benefits. Current research evidence in coronavirus is lacking and therefore evidence from acute respiratory infections have been used to inform this review.

Do NSAIDs increase rates of heart attacks in ARI?

Influenza-like illness and respiratory tract infection are associated with an increase in acute myocardial infarction. A [meta-analysis of 16 case-control studies](#) reported that influenza-like illness was twice as likely in those with an acute heart attack, OR 2.01 (95% CI 1.47 to 2.76).

[Long-term use of NSAIDs](#) has been shown to be associated with an increased risk of a heart attack. Individual data from four studies of 446,763 individuals including 61,460 with acute myocardial infarction showed that taking any dose of NSAIDs for one week or more was associated with a 50% increased risk of a heart attack. Odds ratios for increased: Ibuprofen, 1.48 (1.00 to 2.26); Diclofenac, 1.50 (1.06 to 2.04) and Naproxen 1.53 (1.07 to 2.33).



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Use of NSAIDs during acute respiratory infections has been associated with an increased risk of a heart attack:

[A retrospective analysis of 9,793 patients](#) with incident acute myocardial infarction in Taiwan between 2007 and 2011 found that the use of NSAIDs during acute respiratory infection was associated with:

- Increased risk of a heart attack; adjusted odds ratio * 3.41; 95% CI 2.80–4.16);
- Without NSAIDs led to a 2.7-fold increased risk (aOR = 2.65; 95% CI = 2.29 to 3.06):
- Parenteral NSAIDs (any non-oral means of administration) was associated with much higher risk (OR = 7.22; 95% CI = 4.07 to 12.81).

Use of NSAIDs during acute respiratory infections has been associated with an increased risk of stroke:

[An analysis of 29 518 patients](#) with an incident stroke suggested that NSAIDs were associated with a more than doubling of the risk of stroke, adjusted odds ratio,* aOR 2.27, 95% CI, 2.00-2.58). Parenteral NSAIDs were associated with a much higher risk of ischemic stroke (aOR 4.24, 95% CI, 2.92-6.15) or a hemorrhagic stroke (aOR 9.71, 95% CI, 3.79-24.92).

**Adjusted for discordant use of concomitant medications before the index date*

NICE BNF advice

'All NSAID use (including cyclo-oxygenase-2 selective inhibitors) can, to varying degrees, be associated with a small increased risk of thrombotic events (e.g. myocardial infarction and stroke) independent of baseline cardiovascular risk factors or duration of NSAID use; however, the greatest risk may be in those receiving high doses long term.'

'The lowest effective dose of NSAID should be prescribed for the shortest period of time to control symptoms and the need for long-term treatment should be reviewed periodically.'



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Do NSAIDs affect the duration of the 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

Edward Sloan, MD, MPH