
Reminder – Avoid NSAIDs in chickenpox

Key points:

- In children
 - NSAIDs should be avoided for both pain relief and fever management in chickenpox and shingles.
- In adults
 - NSAIDs should be avoided in chickenpox
- Paracetamol is safe

Why?

Several studies have raised concerns of an association between NSAID use during an attack of chickenpox and an increased risk of **necrotising soft tissue infections** and **invasive Group A beta-haemolytic streptococcus (GAS)** infections, including:

- A UK General Practice Database Study¹ of more than 240,000 children and adults with either chickenpox or shingles found that:
 - There was a 2 to 5 fold increase in the risk of invasive skin conditions with NSAID use
 - The risks were higher in chickenpox (RR 4.9, CI 2.1-11.4) and lower in shingles (RR 1.6, CI 2.1-2.4)
 - The absolute risk of severe skin infections is low (~3/1000 for chickenpox & ~6/1000 for shingles)
- These concerns were also identified in other observational studies that looked at chickenpox alone.

A further 2018 review² (using CINAHL, Medline, Embase and Cochrane) of NSAID use in chickenpox (6 studies meet inclusion criteria) stated that, although no firm conclusions could be made (as no good quality RCTs exist on this topic), the majority of the papers did show an increased risk of severe bacterial skin infections secondary to NSAID use. It identified some potential confounding factors with some of the studies. The review concluded that, pending further research, it would be advisable to avoid NSAIDs use in cases of chickenpox. Paracetamol should be given instead.

What is the mechanism³?

Several mechanisms have been suggested:

- One theory based on animal studies is that there could be a delay in the treatment of skin infections due to the masking effect of the NSAIDs, rather than the alteration of bacterial defences
- In vitro, NSAIDs seem to accelerate progression of invasive skin infections, increase bacterial numbers and reduce effectiveness of antibiotics
- NSAIDs delay muscle and skin regeneration and repair

Given the need for further research in this area, recommendations around the above guidance and the use of NSAIDs during a wide range of bacterial infections and soft tissue injuries may change in time³.

References:

1. Mikaeloff Y, Kezouh A, Suissa S. Nonsteroidal anti-inflammatory drug use and the risk of severe skin and soft tissue complications in patients with varicella or zoster disease. *Br J Clin Pharmacol.* 2008 Feb; 65(2): 203–209.
2. Stone K, Tackley E, Weir S. Best Evidence Topic Report – NSAIDs & Chickenpox. *Emerg Med J* January 2018; 35(1):63-68
3. Varicella zoster and NSAIDs. Red Whale – The GP Update Handbook 2018. www.GPCPD.com