



Editorial

# Judicious uses of NSAIDs in patients with COVID-19, dengue, and chikungunya

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Non-steroidal anti-inflammatory drugs (NSAIDs) are considered the mainstay of current therapies for viral arthropathies, albeit they frequently only offer partial relief. Numerous studies have documented widespread abuse of NSAIDs among COVID-19, dengue, and chikungunya patients. NSAIDs can be used to treat severe arthralgia; however, the World Health Organization (WHO) advises against doing so in suspected chikungunya patients until it has been determined that they do not have dengue. Acetaminophen is recommended by consensus guidelines for treating dengue fever from the WHO and US Centers for Disease Control and Prevention, although NSAIDs are contraindicated due to a possible increase in bleeding risk, which could result in thrombocytopenia as a side effect.

Maintaining the body's hydration level is more crucial than bringing down the temperature with painkillers, especially in dengue or COVID-19 patients. In children, using too much Acetaminophen syrup or suppositories might irritate the stomach, preventing proper digestion, leading to vomiting, and even necessitating hospitalization. With very few exceptions, the majority of hospitalizations or intensive care unit (ICU) admissions among those individuals might be avoided by just avoiding dehydration at home with saline and fruit juice or by simply drinking more water.

At least 165,000 fatalities, 650,000 hospitalizations, and 30% of adverse drug reaction related hospital admissions worldwide are attributable to NSAIDs, mostly as a result of bleeding, heart attacks, strokes, and renal impairment.<sup>[1,2]</sup> In addition, overusing this class of medications can result in kidney damage, and kidney patients may experience its side effects at a 3–4 times higher rate.<sup>[3]</sup> This is particularly crucial because clinical experience and publications have shown that kidney involvement was found in up to 75% of the patients with COVID-19.<sup>[4]</sup> Similarly, obese, elderly, and liver compromised patients with COVID-19 are at increased risk of hospitalization/ICU admission. Furthermore, liver injury and abnormal liver function were reported in nearly one-fourth to half of the hospitalized patients or patients who recovered from COVID-19. Acetaminophen and antibiotics were the most commonly reported drugs for liver injury among hospitalized patients.<sup>[5]</sup> Liver function tests should be performed among these types of hospitalized patients before prescribing NSAIDs and Acetaminophen.

Hypertension or cardiac involvements were the most common pre-existing comorbidities in fetal cases of COVID-19 and Chikungunya patients.<sup>[6,7]</sup> NSAIDs have numerous potentially deleterious effects on immune function and they interact with many drugs which are used in patients with cardio or cerebrovascular disorders: They attenuate the effects of diuretics,

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beta-blockers, Angiotensin-converting enzyme inhibitors, and Angiotensin II receptor Type 2 blockers, thus leading to uncontrolled hypertension or aggravation of heart failure.<sup>[8]</sup>

Sleep disturbance is reported in close to 40% of COVID-19 and some 30–60% of Chikungunya patients (due to severe arthropathy). The use of benzodiazepines is contraindicated among COVID-19 patients with various antiviral medications, and increases the risk of delirium and respiratory depression. However, physicians should recognize that concurrent use of selective serotonin reuptake inhibitors (SSRIs) and NSAIDs was related to a 75% increased risk of upper GI bleeding and should advise patients appropriately if they choose to utilize SSRIs for the same.<sup>[9]</sup> This is particularly concerning because NSAIDs are frequently taken daily or sometimes many times per day, and SSRIs are typically prescribed for daily usage. Mindfulness-based therapies for insomnia management are recommended for both of these types of patients.<sup>[10]</sup>

Finally, it is recommended that pain modulation therapy, especially with NSAIDs, is important for the management of outpatients with early symptoms of COVID-19. Coadministration of NSAIDs with low-dose systemic corticosteroids has been advised to reduce pain and improve quality of life in patients with Chikungunya, only if the benefits outweigh the risks. In both of these cases, other comorbid situations should be carefully considered. Resistance training with NSAIDs, along with professional guidance, is highly recommended for post-COVID and Chikungunya pain-discomfort management. NSAIDs are contra-indicated in dengue fever. In addition to recommending daily follow-up, dengue patients who are being followed as outpatients must be counseled on appropriate home care and on attending to warning signs warranting an earlier return to the clinic for re-evaluation. Along with tepid sponging, Acetaminophen is advised for fever relief.

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