# Analgesia and COVID-19

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*Re letter to British Journal of Clinical Pharmacology*

**Analgesia and COVID-19**

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Dear editor,

In their comprehensive review of immunomodulatory effects of opioids and analgesics, Abdel Shaheed et al. report research indicating that some NSAIDs demonstrate in vitro and in vivo anti-viral activity against SARS-CoV-2, focussing particularly on indomethacin[1]. They point out that ibuprofen has not shown such activity, citing the work of Chen et al[2]. However, more recent in vitro research in Caco-2 cells indicates that ibuprofen does indeed suppress SARS-CoV-2 viral load[3], albeit only at higher concentrations than those tested by Chen at al[2]. Flurbiprofen has similar anti-viral activity at higher concentrations[3]. The emerging evidence base for NSAIDs demonstrating in vitro anti-SARS-CoV-2 activity now includes indomethacin[1], naproxen[4], flurbiprofen[3] and ibuprofen[3].

The review also considers controversies surrounding immunisation and whether the use of analgesics to treat post-vaccination symptoms adversely affects immunogenicity. This is particularly relevant in the present context of COVID-19 and concerns over vaccine hesitancy.

For vaccinations in general, Saleh et al. note observational studies are reassuring and 'that only few RCTS demonstrated blunted antibody response of unknown clinical significance.[5] The authors suggest that timing of medication is paramount. In all studies reporting a negative effect on antibody response, medications were given prophylactically, before vaccination, rather than the more common practice of using medication after vaccination if required[5].

The emerging evidence in COVID-19 immunisation is also reassuring. In trials of the Oxford/AZ vaccine, a protocol amendment meant two of the five sites allowed prophylactic paracetamol to be administered before vaccination[6]. This significantly reduced adverse effects of the vaccine without compromising immunogenicity based on antibody titres[6]. A recent review by Ooi *et al.* [7] considers data from the Pfizer/BioNTech and Jansen/J&J trials in which analgesics and antipyretics were permitted, if needed, post-vaccination. Whilst younger participants were more likely to need medication than older participants, vaccine efficacy remained stable across age groups[7]. Furthermore, the fact that up to one-fifth of patients required analgesia did not prevent these vaccines from demonstrating remarkable efficacy[7].

Whilst further research, particularly into cell mediated mechanisms, is required, current evidence supports the short-term use of analgesics after COVID vaccination[7]. As Omicron is currently surging in several countries, vaccination will continue to play a key role in limiting morbidity and mortality. Measures which reduce vaccine hesitancy – including the availability of effective post-vaccination symptom relief – have significant implications for public health.

**Competing interests**

The authors are employees of Reckitt, the owners and distributors of the Nurofen brand.

**References**

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