

Letters to the editor

Send your letters to the Editor, *British Dental Journal*, 64 Wimpole Street, London, W1G 8YS. Email bdj@bda.org. Priority will be given to letters less than 500 words long. Authors must sign the letter, which may be edited for reasons of space.

Coronavirus

Toothbrushing against coronavirus

Sir, hand washing with soap or antimicrobial gels to reduce the transmission of infectious diseases, including COVID-19, is based on sound biological principles. Thus, soaps, detergents and antiseptics can destroy or remove a range of infectious microbes from the hands, thereby reducing the risk of indirect self or person to person infection. COVID-19 is a respiratory infection, where transmission between individuals is primarily by droplet spread of the coronavirus by coughing or sneezing. From my own knowledge and listening to experts, a major source of droplets are derived from saliva. I am therefore somewhat surprised that our profession has not been promoting oral hygiene, through toothbrushing with toothpaste, in the preventive approach to COVID-19. The majority, if not all toothpastes, contain detergents, which confer significant antimicrobial properties to the product, indeed the same detergents are present in many hand washing formulations, recommended against coronavirus.

The recommendation to tooth brush with toothpaste for two minutes twice a day, I believe, should be reinforced by the dental profession, the media and the government and its advisors. Although, we may assume such oral hygiene practices are already the norm, this is certainly not the case, particularly for those individuals who coincidentally are most at risk of contracting COVID-19. This includes the elderly, particularly in nursing and retirement homes, where hygiene practices often depend on carers. Finally, I would address the idea of using antimicrobial mouthrinses, particularly chlorhexidine products. Unfortunately, the evidence base for their use in preventing or reducing

transmission of coronavirus infection is not in place. Indeed, although some antiseptic rinses, including chlorhexidine, have antiviral action, the lipid outer layer of coronavirus would probably protect against such agents.

M. Addy, Bristol, UK

<https://doi.org/10.1038/s41415-020-1450-9>

Coronavirus and analgesics

Sir, most commonly used drugs to treat acute pain in dental practice and oral surgery are more or less connected to possible adverse effects in patients suffering from virus infections. However, ibuprofen or paracetamol, or their combination with weak opioids, are still recommended for analgesic short term use in dentistry and oral surgery according to normal guidelines regarding dosages, severity of illness, and patient age.

NSAIDs, paracetamol and opioids all may display negative effects in experimental *in vitro*, animal models, or limited clinical trials. Opioids for the majority of viruses enhance viral pathogenesis by modulation of immune responses.¹ Experimental animal studies are ambivalent concerning NSAIDs and paracetamol. A systematic review showed influenza infected rats to have an increased mortality rate following analgesics/antipyretics (ie aspirin, paracetamol and diclofenac).² The same review showed, however, little evidence for a similar effect on humans, although the quality of those studies was criticised.

Human volunteers challenged with rhinovirus type 2 given ibuprofen, aspirin, and paracetamol showed that aspirin and paracetamol were associated with suppression of serum antibody and a trend for a prolonged time of viral shedding.³ Aspirin increased virus shedding, but did not alter the rate of infection or illness.⁴ Paracetamol prolongs the actual illness

in experimentally infected patients with influenza A,⁵ and inhibits leukocyte function in *in vitro* experiments.⁶ Glucocorticoids used in hospital settings during influenza epidemics show little evidence for negative effects although a clinical trial indicates an apparent increase in long-term mortality in patients suffering from severe influenza pneumonia and acute respiratory distress syndrome.⁷ The impact of a reduction of the inflammatory process during a virus infection has been extensively discussed. Nevertheless, the role of anti-inflammatory drug impact on the disease is not answered due to lack of evidence for a beneficial effect in large scale clinical situations.

In conclusion, we do not have enough data at the present time to abandon the use of specific commonly used analgesic drugs in general dental and oral surgery practice for the sole purpose of relieving pain.

L. A. Skoglund, E. C. Vigen, P. Coulthard, Oslo, Norway and London, UK

References

1. Tahamtan A, Tavakoli-Yaraki M, Mokhtari-Azad T *et al*. Opioids and viral infections: a double-edged sword. *Front Microbiol* 2016; **7**: 970.
2. Eyers S, Weatherall M, Shirtcliffe P *et al*. The effect on mortality of antipyretics in the treatment of influenza infection: systematic review and meta-analysis. *J R Soc Med* 2010; **103**: 403-411.
3. Graham N M, Burrell C J, Douglas R M *et al*. Adverse effects of aspirin, acetaminophen, and ibuprofen on immune function, viral shedding, and clinical status in rhinovirus-infected volunteers. *J Infect Dis* 1990; **162**: 1277-1282.
4. Stanley E D, Jackson G G, Panusarn C *et al*. Increased virus shedding with aspirin treatment of rhinovirus infection. *J Am Med Assoc* 1975; **231**: 1248-1251.
5. Plaisance K I, Kudravalli S, Wasserman S S *et al*. Effect of antipyretic therapy on the duration of illness in experimental influenza A, Shigella sonnei, and Rickettsia rickettsii infections. *Pharmacother* 2000; **20**: 1417-1422.
6. Shalabi E A. Acetaminophen inhibits the human polymorphonuclear leukocyte function in vitro. *Immunopharmacol* 1992; **24**: 37-45.
7. Liu Q, Zhou Y-H, Yang Z-Q. The cytokine storm of severe influenza and development of immunomodulatory therapy. *Cell Mol Immunol* 2016; **13**: 3-10.

<https://doi.org/10.1038/s41415-020-1485-y>