Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the Editor Regarding: "Myocarditis and Cardiac Complications Associated With COVID-19 and mRNA Vaccination" by Holland et al., Heart Lung Circ. 2022;31(7):924-33.

Keywords NSAIDs • myocarditis • COVID-19 • mRNA vaccine

We read with interest the article by Holland and colleagues who provide an extensive review and summary of the literature relating to COVID-19 and mRNA vaccine associated myocarditis [1], conditions for which clinical guidance has been lacking. The authors discuss in their article that there is insufficient evidence to recommend antiviral or immunomodulatory therapy (with the exception of significant respiratory involvement for which steroids may be beneficial); however, discussion surrounding the use of nonsteroidal anti-inflammatory drugs (NSAIDs) in COVID-19 and/or mRNA vaccine associated myocarditis is absent.

Although there are recent some preliminary data to support their safety [2,3], NSAIDs are not generally recommended in myocarditis (at least in the absence of pericardial involvement), in part due to findings from animal studies which demonstrated potential worsening of myocarditis with NSAID use but also due to concerns that NSAID use in individuals with heart failure could exacerbate their cardiac insufficiency [4]. Additionally, data to support improved outcomes with their use in myocarditis are lacking.

Specifically in the setting of COVID-19 and mRNA vaccine associated myocarditis, there are no data demonstrating improved clinical outcomes with the use of NSAIDs. Therefore although COVID-19 and mRNA vaccine associated myocarditis may significantly differ from other forms myocarditis (and from each other) in terms of pathophysiology, until this has been clearly elucidated there should remain at least some degree of caution with the use of NSAIDS in all forms of myocarditis [5]. In a systematic review of SARS-CoV-2 vaccination associated myocarditis, most (76.5%) received NSAIDs as part of their treatment [6] and in another more recent study, 58% of individuals received NSAIDs for COVID-19 vaccination associated myocarditis [7]. Despite these observations, there are still insufficient data to draw clear conclusions regarding the efficacy of NSAIDs in this setting. Given the high levels of NSAID use in the COVID-19/mRNA vaccine associated myocarditis as evidenced by these studies (even in the absence of clear guidance or recommendations for their use), we deem it prudent to at least discuss their use in this setting even without sufficient data to make any clear recommendations, particularly given the previously recognised concerns with their use in myocarditis in general.

Declaration of Competing Interest

None of the authors have any competing interests to declare

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