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Letter: is pneumococcal vaccination safe during the COVID-19 pandemic? Authors' reply

We acknowledge the concern outlined by Deniz et al in regard to the possible detrimental effect of pneumococcal vaccination on a patient with probable or co-existing COVID-19 due to the potential for progression to cytokine storm, acute respiratory distress syndrome and death as a result of NLRP3 inflammasome activation and consequent hyperinflammatory response.[1] Triggering the NLRP3 inflammasome by intracellular viral pathogens may lead to excessive production of IL-1β with potentially pathological consequences.[1] However, we wish to reiterate that our recommendations regarding pneumococcal vaccination for patients with IBD centre around optimising as many modifiable factors in patients who are likely to be, or due to be, immunocompromised.[2] This is especially important given that bacterial co-infection, including *Streptococcus pneumoniae*, has been described in up to 50% of patients with COVID-19 and has been associated with significantly reduced survival.[3,4]

Patients with IBD are at increased risk of vaccine-preventable diseases.[5] Current recommendations for patients with chronic inflammatory diseases maintained on immunosuppressive medications state that inactivated vaccines should be administered to this population.[6] In regard to pneumococcal vaccine, PCV13 (pneumococcal polysaccharide conjugated) should be administered to patients with chronic inflammatory conditions being treated with immunosuppression.[6] PPSV23 (pneumococcal purified capsular polysaccharides) should be administered to patients with planned commencement of low- or high-level immunosuppression.[6] It is the shared responsibility of the specialist and primary care provider to ensure that appropriate vaccinations are administered to immunocompromised patients as per current guidelines.[6] Vaccination should occur prior to planned immunosuppression where possible (≥4 weeks prior to immunosuppression for live vaccines) and should be avoided within 2 weeks of initiation of immunosuppression. Inactivated vaccines should be given ≥2 weeks prior to immunosuppression.[6]

While Deniz et al[1] refer to PPSV23 vaccination-associated severe local and systemic reactions in patients with cryopyrin-associated periodic syndromes, all these reactions resolved within 3-17 days.[7,8] More relevant to our IBD patient cohort is the finding in a recent systematic review for the European League Against Rheumatism 2019 recommendations, which demonstrated no overall safety issues independent of vaccine type from studies in rheumatoid arthritis, systemic lupus erythematosus, spondyloarthropathy and primary systemic sclerosis.[9] These conditions more closely represent our IBD patient population and consequently reassure us of the safety of optimising vaccination status in this patient cohort. Furthermore, it is worth noting that, from an immunologic perspective, those on immunosuppressive or modulating medications may have lower immunogenic reactions and need additional doses of vaccine to overcome this.[10]

Ultimately, preventing secondary co-infection in patients with COVID-19 may be associated with survival benefit and we therefore we stand by our recommendation of prophylactic pneumococcus vaccination in immunocompromised patients during the pandemic. However, in agreement with Deniz et al,[1] for those patients with active COVID-19 infection, we advise against concurrent pneumococcal vaccination and suggest that patients should be pre-screened for symptoms and exposure before vaccination occurs. In addition, clinicians should consider local rates of COVID-19 transmission and refer to local guidelines for optimal timing of vaccination.

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LINKED CONTENT

This article is linked to Al-Ani et al and Deniz et al papers. To view these articles, visit https://doi.org/10.1111/apt.15779 and https://doi.org/10.1111/apt.15903

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