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LETTER – TRANSLATIONAL RESEARCH

Reply to: COVID-19 Vaccination in Patients who Develop COVID-19 After Cancer Surgery: Correspondence by Mungmunpuntipantip and Wiwanitkit

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To begin, we agree that there are likely patients undergoing surgery with asymptomatic COVID-19 infection. However, given the adoption of universal preoperative SARS-CoV-2 screening at many centers in the United States, this is expected to be a small number with minimal influence on the conclusions of our study.[1] In addition, a patient with undiagnosed SARS-CoV-2 infection would be analyzed in the ''no postoperative COVID-19'' group. Because COVID-19 infection is a known risk factor for adverse postoperative outcomes, including these patients in the ''no postoperative COVID-19'' group may actually underestimate the negative impact of postoperative COVID-19 on surgical outcomes.[2]

The authors raise the possibility of variable immunity following COVID-19 vaccination due to genetic heterogeneity and comorbidities in the population. However, previous research by Calzetta and colleagues concluded that patient factors, such as age, sex, and type of vaccine, do not modulate the efficacy of vaccines against SARS-CoV-2.[3] Additionally, in a 2021 study by Thakkar et al., patients with cancer diagnoses were shown to have a 94% seroconversion rate following vaccination.[4] Finally, our study shows that vaccination decreases the risk of developing adverse surgical outcomes in patients with postoperative COVID-19, suggesting that those included in our study did confer benefit following vaccination.[5]

To conclude, the impact of undiagnosed SARS-CoV-2 and potential for variable vaccine immunity would not change the interpretation of the study findings. Vaccination against SARS-CoV-2 is an important tool for mitigating the risk of adverse postoperative events in patients who develop COVID-19 after surgery. Ultimately, we agree with the authors that additional research is needed to optimize patients in the preoperative setting as the COVID-19 pandemic transitions to an endemic phase. The ability to leverage population-level, real-world data (as contained within the National COVID Cohort Collaborative Data Enclave) is critical to achieving this goal.

ACKNOWLEDGMENT We thank the authors for their interest in our recent study measuring surgical outcomes in patients undergoing cancer resection who develop postoperative COVID-19. Also, we appreciate the opportunity to further discuss the implications of our research and address the points of consideration raised in their letter. Our response will focus on clarifying any potential impact of undiagnosed, preoperative SARS-CoV-2 infection and variable acquired vaccine immunity on our findings.

DISCLOSURE The authors declare that they have no conflict of interest.

REFERENCES

1. Kothari AN, et al. Universal preoperative SARS-CoV-2 testing can facilitate safe surgical treatment during local COVID-19 surges. *Br J Surg*. 2020. https://doi.org/10.1093/bjs/znaa062.

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2. Nepogodiev D, et al. Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study. *Lancet*. 2020;396:27–38.
3. Calzetta L, et al. Factors influencing the efficacy of COVID-19 vaccines: a quantitative synthesis of phase III trials. *Vaccines (Basel)*. 2019;9(4):341.
4. Thakkar A, et al. Seroconversion rates following COVID-19 vaccination among patients with cancer. *Cancer Cell*. 2021;39:1081-90.e2.
5. Verhagen NB, et al. Vaccination against SARS-CoV-2 decreases risk of adverse events in patients who develop COVID-19 following cancer surgery. *Ann Surg Oncol*. 2022. https://doi.org/10.1245/s10434-022-12916-z.