



## Author's Reply

Dear Editor,

We thank Kow *et al.* for their observations and comments on our prospective study on the incidence, risk factors, and outcomes of acute kidney injury (AKI) in COVID-19 patients.<sup>1</sup> Microvascular thrombosis and inflammation can contribute to various organ injuries, including AKI in COVID-19 patients. These can be mitigated by anticoagulation treatment. The prespecified secondary analysis of A multicenter, adaptive, randomized controlled platform trial of the safety and efficacy of antithrombotic strategies in hospitalized adults with COVID-19 (ACTIV-4a) and antithrombotic therapy to ameliorate complications of Covid-19 (ATTACC) trial compared therapeutic anticoagulation with prophylactic anticoagulation in noncritical COVID-19 patients and showed a reduced risk of the combined endpoint of severe AKI and death in the therapeutic anticoagulation group (4.4% vs 5.5%).<sup>2</sup> However, the therapeutic heparin group had a higher risk of bleeding (2.4% vs 0.8%). Therapeutic versus prophylactic anticoagulation for patients admitted to hospital with COVID-19 and elevated D-Dimer concentration (ACTION): An Open label multicentric, randomized controlled trial (RCTs).<sup>3</sup> In another multicenter, adaptive, randomized controlled platform trial including the REMAP-CAP, ACTIV-4a, and ATTACC trials involving more than 1000 critically ill COVID-19 patients, therapeutic anticoagulation did not show better survival or other benefits when compared to thromboprophylaxis and was terminated early due to futility.<sup>4</sup> Since most of the patients who developed AKI were critically ill and 88% required ventilatory support, the evidence does not support the use of therapeutic anticoagulation for our patient population.<sup>5</sup>

We reviewed our data and found that all our patients received prophylactic anticoagulation. Further multicentric RCTs are required to prove whether therapeutic anticoagulation is beneficial in reducing AKI as a primary endpoint in noncritical COVID-19 patients. However, as the pandemic has already passed, there is little possibility of confirming this hypothesis.

**Conflicts of interest:** There are no conflicts of interest.

**Shyam Bihari Bansal<sup>1</sup>, Mayur Babras<sup>2</sup>, Abhyuday Singh Rana<sup>1</sup>, Sidharth Kumar Sethi<sup>1</sup>**

<sup>1</sup>Department of Nephrology and Kidney Transplantation, Medanta Medicity, Gurugram, Haryana, <sup>2</sup>Department of Nephrology and Kidney Transplantation, Nandlal Dhoot Hospital, Aurangabad, Maharashtra, India

**Corresponding author:** Shyam Bihari Bansal, Department of Nephrology and Kidney Transplantation, Medanta Medicity, Gurugram, Haryana, India. E-mail: drshyambansal@gmail.com

## References

1. Kow CS, Ramachandram DS, Hasan SS, Thiruchelvam K. Evaluating the impact of therapeutic anticoagulation on acute kidney injury in COVID-19: Insights and future directions. *Indian J Nephrol*. doi: 10.25259/IJN\_716\_2024 [Ahead of Print]
2. Smilowitz NR, Hade EM, Kornblith LZ, Castellucci LA, Cushman M, Farkouh M, *et al.* Effect of therapeutic-dose heparin on severe acute kidney injury and death in noncritically ill patients hospitalized for COVID-19: A prespecified secondary analysis of the ACTIV4a and ATTACC randomized trial. *Res Pract Thromb Haemost* 2023;7:102167.
3. Lopes RD, de Barros E Silva PGM, Furtado RHM, Macedo AVS, Bronhara B, Damiani LP, *et al.* Therapeutic versus prophylactic anticoagulation for patients admitted to hospital with COVID-19 and elevated D-dimer concentration (ACTION): An open-label, multicentre, randomised, controlled trial. *Lancet* 2021;397:2253-63.
4. REMAP-CAP Investigators; ACTIV-4a Investigators; ATTACC Investigators; Goligher EC, Bradbury CA, McVerry BJ, *et al.* Therapeutic anticoagulation with heparin in critically ill patients with Covid-19. *N Engl J Med* 2021;385:777-89.
5. Bansal SB, Babras M, Rana A, Mahapatra A, Yadav DK, Sethi SK. A prospective study of incidence, risk factors, and outcomes of acute kidney injury in coronavirus disease 2019. *Indian J Nephrol* 2024;34:461-6.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**How to cite this article:** Bansal SB, Babras M, Rana AS, Sethi SK. Author's Reply. *Indian J Nephrol*. doi: 10.25259/IJN\_782\_2024

**Received:** 15-12-2024; **Accepted:** 21-12-2024;  
**Online First:** 25-02-2025; **Published:** \*\*\*

**DOI:** 10.25259/IJN\_782\_2024

