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.

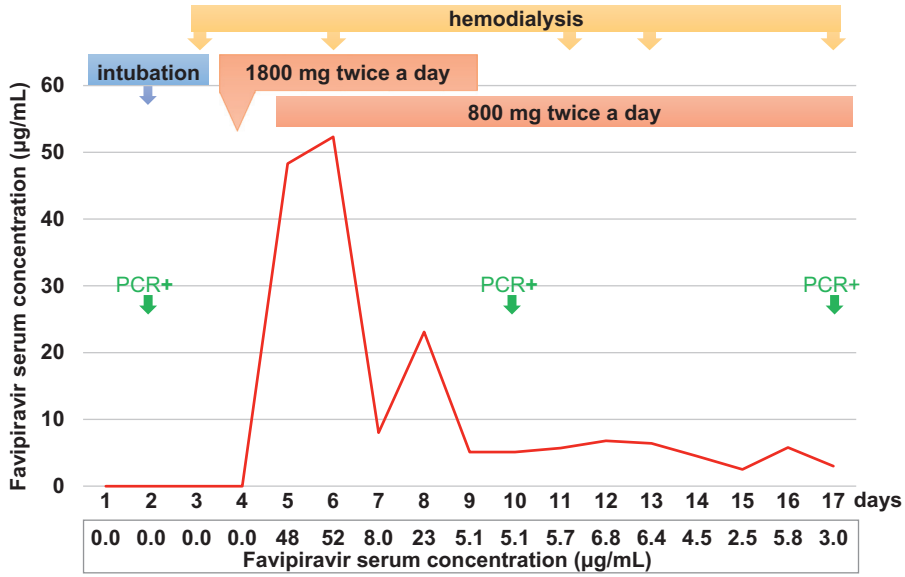

Figure 1. Blood concentrations of favipiravir. Hemodialysis was performed on days 3, 6, 11, 13, and 17. Abbreviation: PCR, polymerase chain reaction.

Supplementary Material

Supplementary File (PDF)

Item S1: Methods for administration of favipiravir and measurement of blood concentration.

Article Information

Authors' Affiliations: Departments of Nephrology (DH) and Departments of Pharmacy (DY, KS), National Hospital Organization Kyoto Medical Center, Kyoto, Japan.

Address for Correspondence: Daisuke Hirai, MD, National Hospital Organization Kyoto Medical Center, 1-1, Mukaihata-cho, Fukakusa, Fushimi-ku, Kyoto 612-8555, Japan. E-mail: hirai.d.aisuke610@gmail.com

Support: None.

Financial Disclosure: The authors declare that they have no relevant financial interests.

Peer Review: Received September 10, 2020. Direct editorial input from a Deputy Editor. Accepted in revised form September 22, 2020.

 Published online September 28, 2020 with doi 10.1053/j.ajkd.2020.09.007

References

1. Agrawal U, Raju R, Udwadia ZF. Favipiravir: a new and emerging antiviral option in COVID-19. *Med J Armed Forces India*. 2020;76(4):370-376.
2. Irie K, Nakagawa A, Fujita H, et al. Pharmacokinetics of favipiravir in critically ill patients with COVID-19. *Clin Transl Sci*. 2020;13(5):880-885.
3. Nguyen TH, Guedj J, Anglaret X, et al. Favipiravir pharmacokinetics in Ebola-infected patients of the JIKI trial reveals concentrations lower than targeted. *PLoS Negl Trop Dis*. 2017;11(2):e0005389.
4. Wang M, Cao R, Zhang L, et al. Remdesivir and chloroquine effectively inhibit the recently emerged novel coronavirus (2019-nCoV) in vitro. *Cell Res*. 2020;30(3):269-271.

Corticosteroids and COVID-19: What Could Be the Best Bet in Treating Active Glomerular Diseases in Patients With Concomitant Early COVID-19?

To the Editor:

Patients with early mild or asymptomatic coronavirus disease 2019 (COVID-19) who require intense immunosuppression for underlying immune-mediated diseases pose a dilemma to physicians. In severe COVID-19, organ salvaging measures may not seem a top priority. However, because 80% of COVID-19 illnesses are mild, lasting about a week, starting or delaying intense immunosuppression in early mild COVID-19 and active glomerular diseases should be based on informed decision making.

Corticosteroids, often at high doses, remain the cornerstone of treating most glomerular diseases. Use of high-dose (≥1 mg/kg per day) but not low-dose (<1 mg/kg per day) corticosteroids (methylprednisolone or equivalent) was found to result in prolonged viral shedding (with possible increased hospital stay)[1] and increased risk for mortality[2] in patients with COVID-19. The RECOVERY trial[3] found low-dose corticosteroid treatment (6 mg of dexamethasone) for up to 10 days to be beneficial among hospitalized patients with severe or critical COVID-19. However, the long-term effect of corticosteroids or longer duration of corticosteroid treatment on outcomes of patients with COVID-19 is currently unknown.

We suggest that risk stratification of patients, by balancing the risks of severe COVID-19 with that of irreversible kidney injury, should guide treatment decisions. Currently known risk factors for severe COVID-19 illness (presence of comorbid conditions, lymphopenia,[4] and high viral load[5]) could be incorporated. Although antibody-mediated diseases could possibly be managed with low-dose corticosteroid therapy (~0.5 mg/kg per day of prednisolone) and adjunctive plasmapheresis/intravenous immunoglobulins,[6] other immune-mediated diseases such as podocytopathy and/or acute tubulointerstitial nephritis would typically need high-dose corticosteroids (≥1 mg/kg per day). In case high-dose corticosteroids are used, covering with an antiviral agent could be done. We believe that more data with antiviral therapy will emerge as trials include patients with kidney disease. Not least of all, shared decision making with the patient must be done after explaining possible benefits and harms of treatment.

Saurabh Nayak, MD, DM, Joyita Bharati, MD, DM

Article Information

Authors' Affiliations: Department of Nephrology, All India Institute of Medical Sciences, Raipur (SM); and Department of Nephrology, Post Graduate Institute of Medical Education and Research, Chandigarh, India (JB).

Address for Correspondence: Joyita Bharati, MD, DM, Department of Nephrology, Post Graduate Institute of Medical Education and Research, Chandigarh, India. E-mail: sharma.joyita4@gmail.com

Support: None.

Financial Disclosure: The authors declare that they have no relevant financial interests.

Peer Review: Received August 26, 2020. Direct editorial input from an Associate Editor and a Deputy Editor. Accepted in revised form September 15, 2020.

 Published online September 28, 2020 with doi 10.1053/j.ajkd.2020.09.006

References

1. Li S, Hu Z, Song X. High-dose but not low-dose corticosteroids potentially delay viral shedding of patients with COVID-19 [published online ahead of print June 26, 2020]. Clin Infect Dis. https://doi.org/10.1093/cid/ciaa829
2. Li X, Xu S, Yu M, et al. Risk factors for severity and mortality in adult COVID-19 inpatients in Wuhan. *J Allergy Clin Immunol*. 2020;146:110-118.
3. RECOVERY Collaborative Group; Horby P, Lim WS, et al. Dexamethasone in hospitalized patients with Covid-19 - preliminary report [published online ahead of print July 17, 2020]. *N Engl J Med*. doi: 10.1056/NEJMoa2021436.
4. Tan L, Wang Q, Zhang D, et al. Lymphopenia predicts disease severity of COVID-19: a descriptive and predictive study. *Signal Transduct Target Ther*. 2020;5:33.
5. Rao SN, Manissero D, Steele VR, Pareja J. A narrative systematic review of the clinical utility of cycle threshold values in the context of COVID-19. *Infect Dis Ther*. 2020;9:573-586.
6. Kronbichler A, Gauckler P, Windpessl M, et al. COVID-19: implications for immunosuppression in kidney disease and transplantation. *Nat Rev Nephrol*. 2020;16:365-367.