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Does SARS-CoV-2 reach peritoneal effluent?

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Since the emergence of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic in Turkey on 11 March 2020, we have started to perform telemedicine on our 58 peritoneal dialysis (PD) patients as recommended by the International Society for Peritoneal Dialysis in order to reduce their risk of getting infected.[1] Here we report a case of coronavirus disease 2019 (COVID-19) in a PD patient without any virus shedding in peritoneal fluid.

Our patient was a 62-year-old female with a history of diabetes mellitus, coronary artery disease, and hypertension. She was on continuous ambulatory PD for 2 years without any peritonitis attack. She stated that she had severe myalgia, loss of smell and taste, and a difficulty to swallow without fever, cough, shortness of breath, or nasal obstruction. Two days later, we admitted her to the hospital because of vomiting and nausea with suspected peritonitis. Her physical examination was unremarkable. She had mild lymphopenia (1.42×10^9/L) and elevated C-reactive protein (98 mg/L). Her peritoneal effluent white cell count was 8/mm3. Chest tomography showed mild, bilateral, peripheral ground-glass opacities. We obtained combined oropharyngeal–nasopharyngeal swab specimen for COVID-19. The presence of SARS-CoV-2 RNA was evaluated by the reverse transcriptase–polymerase chain reaction (RT-PCR) analysis by using the Bio-Speedy COVID-19 RT-qPCR kit (Bioeksen, Turkey) run on Rotor-gene real-time PCR cycler (Qiagen, Germantown, Maryland, USA). The RT-PCR result for SARS-CoV-2 was reported positive after 12 h so she was transferred to the isolation ward. We immediately performed SARS-CoV-2 RT-PCR assay from the peritoneal effluent after 6-h duration of dwells without centrifugation for two consequent times which were all negative. As a treatment, hydroxychloroquine was given for 5 days.

The presence of SARS-CoV-2 was previously evaluated and detected in blood, feces, urine, and respiratory tract samples.[2] There have been reports about the PD patients infected with SARS-CoV in 2003 and all the patients' PD effluent were tested negative.[3] It might be related to the fact that, while peritoneal membranes have pores of a maximum of 20–40 nm in diameter, SARS-CoV-2 virion diameter is approximately 125 nm. On the contrary, in a recent report, there is a positive PCR result for SARS-CoV-2 of peritoneal dialysate of a PD patient who had a severe case of COVID-19.[4] However, in our patient, the clinical course was favorable and all the symptoms were resolved in a week and there was no virus shedding in peritoneal fluid after a 6-h dwell time.

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Author contributions

RES wrote the first draft of the manuscript. All authors reviewed and edited the manuscript and approved the final version of the manuscript.

Declaration of conflicting interests

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Ethical approval

Ankara University School of Medicine does not require ethical approval for reporting individual cases.

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Informed consent to publish

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References

1. Brown E, Arteaga JD, Chow J, et al. ISPD: strategies regarding COVID-19 in PD patients, https://ispd.org/strategies-covid19/ (accessed 7 June 2020).
2. Wang W, Xu Y, Gao R, et al. Detection of SARS-CoV-2 in different types of clinical specimens. *Jama* 2020; 323(18): 1843–1844.
3. Kwan BC, Leung CB, Szeto CC, et al. Severe acute respiratory syndrome in dialysis patients. *J Am Soc Nephrol* 2004; 15(7): 1883–1888.
4. Vischini G, D'Alonzo S, Grandaliano G, et al. SARS-CoV-2 in the peritoneal waste in a patient treated with peritoneal dialysis. *Kidney Int* 2020; 98(1): 237–238.