

## SYNOPSIS

04/08/2020

# Review of “Covid-19 in critically ill patients in the Seattle region — case series”

**Article citation:** Bhatraju PK, Ghassemieh BJ, Nichols M, Kim R, Jerome KR, Nalla AK, et al. Covid-19 in critically ill patients in the Seattle region — case series. *N Engl J Med*. 2020 Mar 30 [Epub ahead of print]. Available from: <https://www.nejm.org/doi/full/10.1056/NEJMoa2004500>

## One-minute summary

- The authors provide a clinical description of 24 COVID-19 patients admitted to 9 Seattle area intensive care units (ICU) between February 24 and March 9, 2020.
  - Mean age was 64 years (range 23-97), 15/24 (63%) male.
  - 21 had  $\geq 1$  comorbid conditions including 14/24 (58%) with diabetes, 5/24 (21%) with chronic kidney disease, and 3/24 (14%) with asthma.
  - None travelled to a high risk area in the previous 3 months.
  - Mean duration of symptoms before admission was 7 (SD $\pm$ 4) days.
- On admission:
  - Clinical symptoms included 21/24 (88%) with cough, 21/24 (88%) with shortness of breath, 12/24 (50%) with documented fever, 10/24 (42%) with sputum production, 4/24 (17%) with rhinorrhea, 2/24 (8%) with sore throat, and 2/24 (8%) with headache.
  - Notable laboratory abnormalities included 18/24 (75%) with lymphopenia and 9/24 (41%) with hepatitis.
- No viral or bacterial co-infections were identified.
- All patients had bilateral infiltrates on chest x-ray (1 patient died prior to having an x-ray).
- Management:
  - 18/24 (75%) received invasive mechanical ventilation, 17/24 (71%) had hypotension requiring vasopressors, 10/24 (42%) received high flow oxygen. Of those ventilated 5/18 (28%) required prone positioning. No patients received extracorporeal membrane oxygenation.
  - 7/24 (39%) received remdesivir, 1/24 (4%) hydroxychloroquine, and 1/24 (4%) lopinavir-ritonavir. No patients received tocilizumab or glucocorticoids.
- 12/24 (50%) died in hospital, 5/24 (21%) were discharged at the time of publication (March 23). Death was more common in those  $>65$  years of age (62% vs. 37%).
- Median length of stay for survivors: 17 (IQR 16-23) days in hospital, 14 (IQR 4-17) days in ICU.

## Additional information

- Line listed patient data is provided in the appendix.

- Data were retrieved from each facility’s electronic medical record. All laboratory tests and radiologic assessments were carried out at the discretion of the treating physician.
- The 3 asthmatic patients received oral steroids prior to deteriorating and presenting to hospital, raising the question if steroids may have contributed to the clinical worsening. Further study on the impact of corticosteroids is warranted.
- Four patients who died within 4 days of ICU admission had do not resuscitate orders.

## PHO reviewer’s comments

- The authors provide a descriptive case series of critically ill patients in the Seattle area with COVID-19. The description and outcomes are similar to those reported in China and Italy. The critically ill population includes older adults with lymphopenia, hepatitis, and bilateral pneumonia. Fever is frequently absent at this stage of illness. The mortality rate was at least 50% in this critically ill population, but only 20% were alive and discharged at the time of publication.
- No inferences can be drawn in terms of risk factors for death or impact of different treatments.

## Citation

Ontario Agency for Health Protection and Promotion (Public Health Ontario). Synopsis: “Covid-19 in critically ill patients in the Seattle region — case series”. Toronto, ON: Queen’s Printer for Ontario; 2020.

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