

Correspondence



Letter to Editor: Strategy for Hospitalization and Discharge of COVID-19 Patients: Based on the Nationwide Clinical Course Analysis

Yeonjae Kim ,¹ Ho Kyung Sung ,² Ji Hwan Bang ,¹ Im-Seok Koh ,³ Joon-Sung Joh ,⁴ Young-Su Ju ,⁵ Hye Sook Min ,⁶ Bum Sik Chin ,⁷ and Ki-hyun Chung ⁸

OPEN ACCESS

Received: Jul 5, 2020

Accepted: Sep 24, 2020

Address for Correspondence:

Ki-hyun Chung, MD

Department of Pediatrics, National Medical Center, 245 Eulji-ro, Jung-gu, Seoul 04564, Korea.

E-mail: ckhyun56@nmc.or.kr

© 2020 The Korean Academy of Medical Sciences.

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ORCID iDs

Yeonjae Kim

<https://orcid.org/0000-0003-4144-9077>

Ho Kyung Sung

<https://orcid.org/0000-0002-1207-0298>

Ji Hwan Bang

<https://orcid.org/0000-0002-7628-1182>

Im-Seok Koh

<https://orcid.org/0000-0002-9265-2879>

Joon-Sung Joh

<https://orcid.org/0000-0002-5044-2742>

Young-Su Ju

<https://orcid.org/0000-0003-2829-9457>

Hye Sook Min

<https://orcid.org/0000-0003-0029-5163>

Bum Sik Chin

<https://orcid.org/0000-0003-3021-1434>

Ki-hyun Chung

<https://orcid.org/0000-0002-7100-2519>

<https://jkms.org>

¹Office for the Central Infectious Disease Hospital, National Medical Center, Seoul, Korea

²National Emergency Medical Center, National Medical Center, Seoul, Korea

³Department of Neurology, National Medical Center, Seoul, Korea

⁴Division of Pulmonary and Critical Care Medicine, Department of Internal Medicine, National Medical Center, Seoul, Korea

⁵Headquarters for Public Healthcare, National Medical Center, Seoul, Korea

⁶Center for Public Healthcare Policy, National Medical Center, Seoul, Korea

⁷Division of Infectious Disease, Department of Internal Medicine, National Medical Center, Seoul, Korea

⁸Department of Pediatrics, National Medical Center, Seoul, Korea

► See the article “Clinical Course and Outcomes of 3,060 Patients with Coronavirus Disease 2019 in Korea, January–May 2020” in volume 35, number 30, e280.

Dear Editor,

Despite the efforts using various prevention/control measures, coronavirus disease 2019 (COVID-19) patients continue to occur due to imported infections and the spread within communities. As of September 22, 2020, there were 23,216 cumulative confirmed cases in Korea, and around 100 confirmed cases per day.¹ As this trend continues, there are concerns that COVID-19 may re-surge to a larger scale at the end of this year, which could result in overwhelming of medical facilities and collapse of healthcare system. Thus, maintaining the healthcare system scientific and strategic criteria for hospitalization and discharge are essential to reduce the collapse. Recently, we reported clinical course and outcomes of 3,060 COVID-19 patients.²

Through additional analyses of above 3,060 COVID-19 cases, we can find some important implications regarding hospital admission or discharge, which could prevent overcrowding of medical facilities. In this context, we suggest 5 strategic options.

1. If patients met all of the following criteria at the time of diagnosis, the possibility of requiring oxygen therapy was 1.8% (10/556): 1) age under 50 years, 2) no underlying disease of hypertension, diabetes, chronic lung disease, chronic kidney disease, or dementia, and 3) alert mental status, and 4) no subjective dyspnea. The patients who meet all the conditions mentioned above don't need hospitalization and stay at home if there are family members or friends who can check condition of the patients.
2. If the patients met all the following criteria at the time of hospital admission, the possibility of requiring oxygen therapy was only 0.1% (1/778): 1) age under 50 years old,

Disclosure

The authors have no potential conflicts of interest to disclose.

Author Contributions

Conceptualization: Bang JH, Joh JS, Ju YS, Min HS, Chin BS, Chung K. Data curation: Sung HK. Formal analysis: Sung HK. Investigation: Sung HK. Methodology: Sung HK, Bang JH, Chung K. Project administration: Chung K. Resources: Kim Y. Supervision: Bang JH. Writing – original draft: Kim Y, Chung K. Writing – review & editing: Sung HK, Bang JH, Joh JS, Ju YS, Min HS, Chin BS

- 2) no underlying disease of hypertension, diabetes, chronic lung disease, chronic kidney disease, or dementia, 3) alert mental status at the time of diagnosis, 4) oxygen saturation > 93% in room air, 5) respiratory rate < 22 times/min, and 6) systolic blood pressure > 100 mmHg. These patients who meet all the conditions mentioned above could be discharged and stay at home if there are family members or friends who can check condition of the patients.
3. If patients are under 50 and have not required oxygen for 10 days after onset of the first symptom, possibility of requirement for future oxygen therapy was only 0.2% (2/813). Thus, the patients could be discharged and stay at home if there are family members or friends who can check condition of the patients.
4. If patients are under 50 and quit oxygen therapy for three days or more, there was no one who needs additional oxygen therapy. These patients could be discharged and stay at home if there are family members or friends who can check condition of the patients.
5. Following conditions were warning signals of clinical deterioration and that probabilities of requiring mechanical ventilation were around 10% or more: 1) body mass index > 30 (9.9%, 6/64), 2) quick sepsis related organ failure assessment score = 1 or more (17.9%, 20/112), 3) underlying disease of diabetes (22.3%, 23/103), chronic kidney diseases (43.8%, 7/16), or dementia (43.5%, 10/23), and 4) age > 65 (23.7%, 32/135). If the patients had any of above conditions should be hospitalized immediately and closely observed.

Overflow of hospitalization could disrupt the medical care system, which may result in catastrophe under pandemic situation. Thus, it is important to reduce unnecessary hospitalization to save beds for high-risked or severe patients. In this context, we think above findings could be helpful in managing current pandemic of COVID-19 in Korea.

REFERENCES

1. Korea Centers for Disease Control and Prevention. Coronavirus disease-19, Republic of Korea. <http://ncov.mohw.go.kr/> Accessed September 22, 2020.
2. Sung HK, Kim JY, Heo J, Seo H, Jang YS, Kim H, et al. Clinical course and outcomes of 3,060 patients with coronavirus disease 2019 in Korea, January-May 2020. *J Korean Med Sci* 2020;35(30):e280.
[PUBMED](#) | [CROSSREF](#)