

Comparison of the clinical process and outcomes in patients with fever who visited the emergency department before and after coronavirus infection 2019 outbreak

SungJin Bae¹, Dong Hoon Lee², Ho Sub Chung¹, Myeong Namgung¹, Yoon Hee Choi³, and Jin Hong Min⁴

¹Chung-Ang University Hospital

²Chung-Ang University College of Medicine and Graduate School of Medicine

³Ewha Women's University Mokdong Hospital

⁴Chungnam National University Hospital

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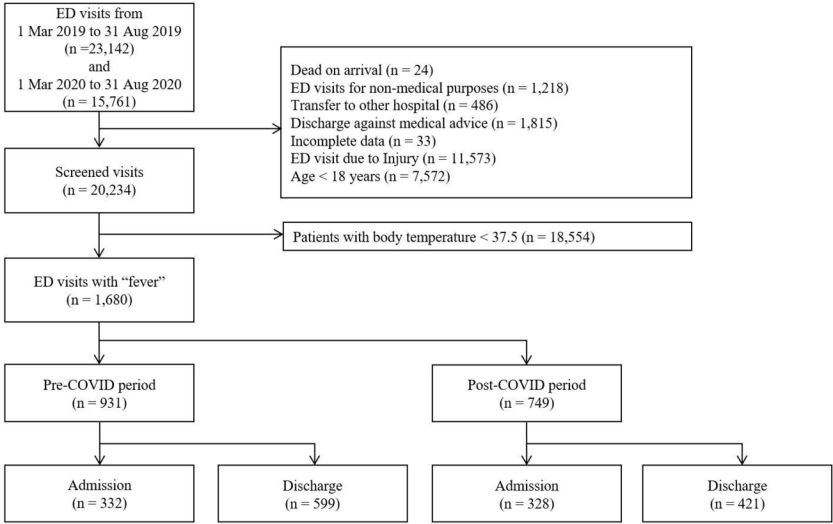
Abstract

Rationale, aims and objectives: The coronavirus infection 2019 (COVID-19) pandemic has affected the emergency department (ED) management. Its viral transmission necessitates the use of isolation rooms and personal protective equipment for treating suspected patients, such as those with fever. This delays the time until the first encounter with the patients, thereby increasing the length of stay (LOS) in the ED. We aimed to compare delays in the ED LOS and clinical processes between the COVID-19 period and pre-COVID-19 period. Moreover, we intended to evaluate if the aforementioned delay affected patient outcomes. **Methods:** We conducted a single-center, retrospective study in Korea. Patients with fever were compared between the “COVID-19 period” from March 2020 to August 2020 and the “pre-COVID-19 period” from March 2019 to September 2019. We compared the overall ED LOS and individual time variable, including initial diagnostic tests (laboratory tests, radiography), specific diagnostic test (computed tomography), and treatment processes (antibiotics). A logistic regression analysis was conducted to identify the association between hospital admission and patient data. **Results:** We enrolled 931 and 749 patients during pre- and COVID-19 periods, respectively. Patients with fever remained in the ED for a longer duration during the COVID-19 period (pre-COVID-19: 207.7±102.7 min vs. during COVID-19: 223.5±119.4 min, $p=0.004$). The total time for performing laboratory tests and radiography displayed significant differences between the two periods, particularly from the time of patient arrival in the ED to the time of issuing the order. The time until antibiotic administration was delayed in the COVID-19 period (pre-COVID-19: 195.8±103.3 min vs. during COVID-19: 216.9±108.4 min, $p=0.003$). The logistic regression analysis for hospital admission identified ED LOS as an independent factor in both periods. **Conclusion:** The delay until encountering patients with fever resulted in longer ED LOS during the COVID-19 period; however, it possibly did not increase the hospital admission rates.

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Flow chart



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