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Clinical characteristics and outcomes of hospitalised patients with COVID-19 treated in Hubei (epicentre) and outside Hubei (non-epicentre): a nationwide analysis of China

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This study highlights the necessity of urgent and vigorous support of healthcare resources and increased public awareness during the early stages of an outbreak of COVID-19 or similar diseases <https://bit.ly/39OWFf0>

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ABSTRACT

Background: During the outbreak of coronavirus disease 2019 (COVID-19), consistent and considerable differences in disease severity and mortality rate of patients treated in Hubei province compared to those in other parts of China have been observed. We sought to compare the clinical characteristics and outcomes of

patients being treated inside and outside Hubei province, and explore the factors underlying these differences.

Methods: Collaborating with the National Health Commission, we established a retrospective cohort to study hospitalised COVID-19 cases in China. Clinical characteristics, the rate of severe events and deaths, and the time to critical illness (invasive ventilation or intensive care unit admission or death) were compared between patients within and outside Hubei. The impact of Wuhan-related exposure (a presumed key factor that drove the severe situation in Hubei, as Wuhan is the epicentre as well the administrative centre of Hubei province) and the duration between symptom onset and admission on prognosis were also determined.

Results: At the data cut-off (31 January 2020), 1590 cases from 575 hospitals in 31 provincial administrative regions were collected (core cohort). The overall rate of severe cases and mortality was 16.0% and 3.2%, respectively. Patients in Hubei (predominantly with Wuhan-related exposure, 597 (92.3%) out of 647) were older (mean age 49.7 *versus* 44.9 years), had more cases with comorbidity (32.9% *versus* 19.7%), higher symptomatic burden, abnormal radiologic manifestations and, especially, a longer waiting time between symptom onset and admission (5.7 *versus* 4.5 days) compared with patients outside Hubei. Patients in Hubei (severe event rate 23.0% *versus* 11.1%, death rate 7.3% *versus* 0.3%, HR (95% CI) for critical illness 1.59 (1.05–2.41)) have a poorer prognosis compared with patients outside Hubei after adjusting for age and comorbidity. However, among patients outside Hubei, the duration from symptom onset to hospitalisation (mean 4.4 *versus* 4.7 days) and prognosis (HR (95%) 0.84 (0.40–1.80)) were similar between patients with or without Wuhan-related exposure. In the overall population, the waiting time, but neither treated in Hubei nor Wuhan-related exposure, remained an independent prognostic factor (HR (95%) 1.05 (1.01–1.08)).

Conclusion: There were more severe cases and poorer outcomes for COVID-19 patients treated in Hubei, which might be attributed to the prolonged duration of symptom onset to hospitalisation in the epicentre. Future studies to determine the reason for delaying hospitalisation are warranted.