

Letter to the Editor



Dementia and COVID-19 Mortality in South Korea

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Conflict of Interest

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Author Contributions

Conceptualization: Park MH; Data curation:

Coronavirus disease 2019 (COVID-19) caused by the novel severe acute respiratory syndrome coronavirus 2 has continued to influence healthcare dynamics, social patterns, and economic systems worldwide. As of mid-March 2021, COVID-19 has already resulted in more than 97,000 infections and 1,690 deaths in South Korea. To date, no treatment has demonstrated its effectiveness with a sufficient level of scientific evidence. Fortunately, a major milestone in the efforts against this pandemic was the rapid and successful development of different vaccines against COVID-19. However, the development of vaccines alone cannot overcome COVID-19. Until the transition to normalcy is achieved, appropriate management for high-risk groups will continue to be one of the main strategies for combating COVID-19.

It has been recommended that patients with high risk for COVID-19 should be given access to early diagnosis and management.¹ Older patients and those with underlying comorbidities or at long-term care facilities may be vulnerable to COVID-19 outbreaks or an increased risk of poor prognosis and death.^{2,3} Most patients with dementia have these 3 risk factors.

We conducted a retrospective observational study to examine the relationship between the mortality of patients with COVID-19 infection and underlying comorbidities, including dementia. Using de-identified data from the Health Insurance Review and Assessment Service (HIRA) of Korea, which were collected until April 8, 2020, we analyzed all patients who had been tested for COVID-19 and who had a history of medical service use for the past 5 years. All patients with COVID-19 were categorized as reverse transcription polymerase chain reaction (RT-PCR) test-positive cases when the diagnosis was confirmed by RT-PCR using respiratory tract specimens. Underlying comorbidities were selected with reports of possible association with COVID-19 in Charlson's comorbidities and previous methods with HIRA of Korea. Thus, the following data were extracted: age at the time of diagnosis, sex, underlying comorbidities during the past 5 years, and mortality. The comorbidities were as follows: hypertension, heart failure, chronic kidney disease, chronic lung disease, diabetes mellitus, ischemic heart disease, dyslipidemia, history of malignancy, arthritis or arthropathy, stroke, Parkinson's disease, epilepsy, and dementia (**Supplementary Table 1**). Non-surviving patients were identified in addition to those who had died despite medical intervention after confirmation of COVID-19.

A total of 1,697 COVID-19 patients with a PCR-confirmed diagnosis were identified. The mean±standard deviation for age was 47.0±21.4 years (with 30.6% of patients ≥60 years old), and 41.7% of the patients were men. The overall mortality was 3.5% (59 of 1,697 patients) in

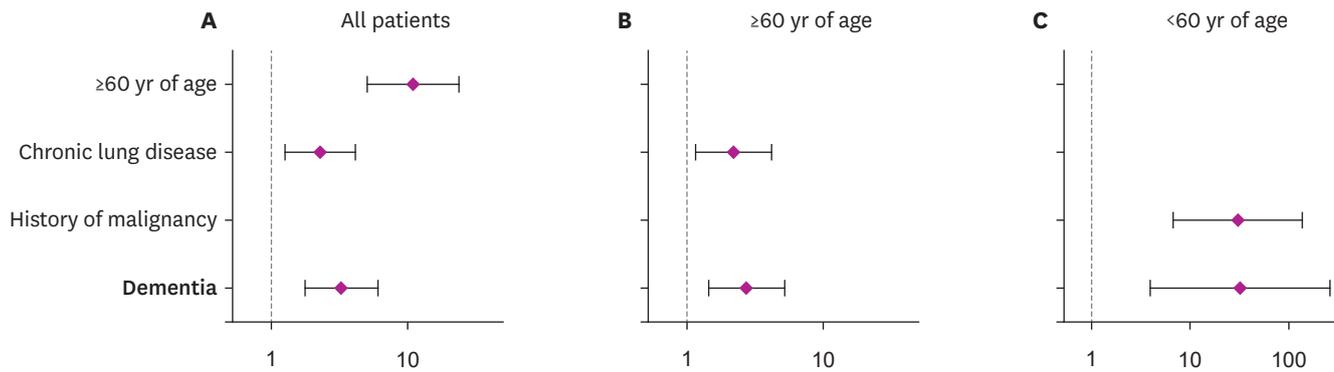


Fig. 1. Risk factors associated with death among coronavirus disease 2019 patients. Multivariable logistic regression analyses are shown with odds ratios and 95% confidence intervals.

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this study population. By a multivariable logistic regression analysis, independent predictors of in-hospital death for COVID-19 were old age (odds ratio [OR], 10.75; 95% confidence interval [CI], 4.93–23.44), chronic lung disease (OR, 2.24; 95% CI, 1.25–4.03), and dementia (OR, 3.19; 95% CI, 1.71–5.93) (Fig. 1 and Supplementary Table 2). The age-stratified analysis for COVID-19-related death revealed that patients ≥60 years of age had accompanying chronic lung disease (OR, 2.14; 95% CI, 1.13–4.04) and dementia (OR, 2.68; 95% CI, 1.41–5.09), whereas patients <60 years of age had accompanying history of malignancy (OR, 30.31; 95% CI, 6.58–139.60) and dementia (OR, 32.37; 95% CI, 3.95–265.10).

This study showed that dementia was an important risk factor for in-hospital deaths of COVID-19 patients in South Korea, regardless of the age. Patients with dementia face a “double burden,” as the pandemic exacerbates both their vulnerability due to increased morbidity and mortality and breakdown of their social support and access to the healthcare system due to lockdown and social distancing measures.⁴ Clinicians and policy makers can use our results to tailor management strategies for patients with dementia, whereas researchers can utilize our findings to improve patient-important outcomes.

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SUPPLEMENTARY MATERIALS

Supplementary Table 1

Definitions and ICD-10 codes used for identifying comorbidities

[Click here to view](#)

Supplementary Table 2

Univariable and multivariable analysis of risk factors associated with death among COVID-19 patients

[Click here to view](#)

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