

Risk factors for admission to ICU among COVID-19 patients: A 6-month observational study in Spain

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Background:

Admission to the Intensive Care Unit (ICU) is one of the most used indicators to estimate the magnitude of the current COVID-19 pandemic. This study was performed to assess the relationship between demographic, lifestyles and comorbidity factors on the severity of patients with SARS-CoV2 infection.

Methods:

An observational study including data from the regional surveillance dataset on acute respiratory infections from September 2020 to February 2021 in one large tertiary hospital in Murcia, Spain. Demographic, clinical and lifestyle factors were collected. A descriptive analysis was carried out using SPSS. Chi-square tests were performed to assess the relationship between comorbidities and lifestyle factors. Binary logistic regression was calculated to estimate the probability of being admitted to ICU. Analysis were adjusted by sex, age, and lifestyle factors.

Results:

Overall, 906 patients with COVID-19 were identified. The mean age was 64.3 years (SD = 16.5 years), and 523 of the patients were male (57.7%). A total of 104 (11.5%) patients required admission to ICU and 142 (15.7%) died during the hospitalisation process. The average length of stay at the hospital was 8 days (SD = 6). Acute renal failure (OR = 7.7; 95% CI: 1.7-33.0), being a smoker (OR = 7.02; 95% CI: 2.7-19, 0) and suffering from obesity (OR = 3.5; 95% CI: 1.2-10.3) were the main risk factors associated with admission to ICU.

Conclusions:

Acute renal failure, obesity, and smoking were strongly associated with both severity and admission to intensive care among patients with COVID-19 infection. More research needs to be done to assess the role of these underlying factors in the severity of COVID-19 infections.

Key messages:

- The design of predictive models for ICU admission during the COVID-19 pandemic should be promoted.
- Features associated to vulnerability in COVID-19 patients must be identified.