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Letter to the Editor

Mortality from sepsis among patients with schizophrenia and mood disorders in an intensive care unit: A chart review

Dear editor,

Life expectancy of patients with severe mental illnesses (SMIs) is shorter than the general population, and the primary cause of this excessive mortality is reportedly physical diseases (Liu et al., 2017). This higher mortality due to physical diseases is attributable to multiple reasons, including less contact with health care systems, delay in diagnosis, and suboptimal delivery of medical care (Liu et al., 2017). Sepsis is a life-threatening organ dysfunction caused by an aberrant host response to infection; it affects millions of people around the world each year (Rhodes et al., 2017). However, data on mortality from sepsis in patients with SMIs are still lacking. Moreover, it remains unknown whether people with SMIs are receiving adequate intensive care. Hence, we conducted a systematic chart review to examine the mortality rate from sepsis in patients with SMIs, and whether they received comparable treatments in the intensive care unit (ICU).

This study was approved by the institutional review board of the Tokyo Metropolitan Bokutoh Hospital, Japan. A systematic chart review of the patients hospitalized for sepsis in the Tertiary Emergency Medical Center of Tokyo Metropolitan Bokutoh Hospital between April 1, 2012 and March 31, 2017 was performed. Patients with sepsis were identified according to the diagnosis made at the time of admission. Psychiatric diagnoses were extracted through chart description.

In-hospital mortality, length of ICU stay, and length of hospital stay were compared between patients with schizophrenia or affective disorders (SMIs), and those without any psychiatric conditions except for dementia (controls). The following demographic and clinical information was collected: age, sex, severity of sepsis, comorbidities on admission, activity of daily living, treatment details including surgery and life support for organ failure (e.g. mechanical ventilation, renal replacement therapy, extracorporeal membrane oxygenation), and withholding of treatment.

Statistical analyses were performed by using R version 1.35. Values of interest were compared between patients with SMIs and controls, using the Fisher's test for categorical variables and the Welch's *t*-test for continuous variables.

227 patients hospitalized for sepsis were identified during the study period. Of these, 6 and 16 patients were excluded because of questionable diagnosis of sepsis and the presence of psychiatric disorders other than affective disorders and schizophrenia, respectively. This left 205 patients to be included in this study; of these, 31 patients (15.1%) had SMIs. Although the patients with SMIs were younger than the controls with a trend level (64.2 ± 15.5 vs 70.2 ± 13.9, $p = 0.05$), other demographic and clinical characteristics including the severity of sepsis and comorbidities were comparable between the two groups. The most common bacteria was E. Coli (38.7%) followed by S. aureus (19.4%) and K. pneumoniae (16.1%) among the patients with SMIs, and E. Coli (27.6%) followed by Streptococcus sp. (16.7%) and K. pneumoniae (13.8%) among the controls, respectively.

There were no significant differences in the frequencies of the following treatments between the patients with SMIs and the controls: mechanical ventilation (74.2% vs 73.6%, $p = 1.0$), renal replacement therapy (35.5% vs 36.8%, $p = 1.0$), extracorporeal membrane oxygenation (6.5% vs 5.2%, $p = 0.67$), surgeries (16.1% vs 26.4%, $p = 0.27$), and withholding of treatment (16.1% vs 17.8%, $p = 1.0$).

No significant group differences were found between the groups in terms of in-hospital mortality (25.8% vs 35.6%, $p = 0.31$), length of ICU stay (11.3 ± 7.6 days vs 12.8 ± 13.5 days, $p = 0.38$), or length of hospital stay (36.2 ± 32.7 days vs 34.4 ± 35.0 days, $p = 0.78$).

Patients with SMIs were reported to receive invasive procedures less frequently (Druss et al., 2000) and showed higher mortality and longer ICU stay than the general population (Daumit et al., 2006). In contrast, there were no differences in the treatment for sepsis or clinical outcomes between the patients with SMIs and controls in our sample.

A treatment gap among psychiatric patients is considered to stem from a variety of reasons; among them, patient's refusal of treatment (Druss et al., 2000) and physician's bias (Druss et al., 2000) are challenging in clinical settings. A lack of difference in the use of invasive treatments and withholding of treatment between groups in this study may be, at least to some extent, explained by a close liaison to seek appropriate management between physicians and psychiatrists in our center.

There are several limitations to be noted in this study: unassessed potential confounding factors, unavailability of long-term outcomes, small sample size, and retrospective single-center study.

In conclusion, the findings in this study underscore the importance of providing appropriate treatment to psychiatric patients without any discrimination, and collaborative care by attending physicians and psychiatrists. Further research is warranted to minimize the mortality and treatment gap and to deliver more effective treatment strategies for patients with SMIs comorbid with serious physical conditions.

Contributors

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Supplementary materials

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