The Impact of Psychiatric Disease on Trauma Morbidity: A Review of Michigan Data

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Introduction: Mental illness is a well-known risk factor for injury and injury recidivism. The impact of pre-existing psychiatric illness on trauma outcomes, however, has received less attention. Our study examines the relationship of pre-existing psychiatric illness on trauma outcomes including length of stay, cost and mortality.

Objective: To determine the impact of pre-existing psychiatric illness (depression and psychosis) on in-hospital trauma outcomes of length of stay, cost of care, morbidity and mortality.

Methods: Patient data were obtained from the Healthcare Cost and Utilization Project’s State Inpatient Database. All patients admitted for trauma in the Detroit metropolitan area from 1/1/2006 to 12/31/2014 were included. The relationship between individual psychiatric comorbidities (depression, psychosis, and other neurological disorders) and outcomes were evaluated with logistic regression (mortality) and generalized linear modeling (length of stay and cost).

Results: Over 420,000 records were reviewed. Approximately one-third (29.9%) of patients had one or more psychiatric diagnoses; these patients were compared to those without a psychiatric diagnosis. Patients with depression had longer hospital stays (RR=1.12, p<0.001) and higher costs (RR=1.07, p<0.001), but also lower mortality (OR=0.69, p<0.001). Patients with psychosis had longer stays (RR=1.18, p<0.001), higher costs (RR=1.02, p =0.002), and lower mortality (OR=0.61, p < 0.001). Patients with other neurological comorbidities had higher mortality (OR=1.23, p<0.001), longer stays (RR=1.29, p<0.001), and higher costs (RR=1.10, p<0.001).

Conclusion: Patients with a psychiatric disorder required longer care and incurred greater costs, whereas mortality was higher for only those with a neurological disorder. Identifying patients’ psychiatric comorbidities at the time of admission for trauma may help optimize treatment. Addressing these conditions may help reduce the cost of trauma care.