Neurological syndromes are associated with increased risk of mortality in patients with COVID-19

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Objective:
The SARS-Cov2 virus is protean in its manifestations, affecting nearly every organ system. However, nervous system involvement and its impact on disease outcome are poorly characterized. The objective of the study is to determine if neurological syndromes are associated with increased risk of inpatient mortality.

Methods:
581 hospitalized patients with confirmed SARS-Cov2 infection, neurological involvement and brain-imaging were compared to hospitalized non-neurological COVID-19 patients. Four patterns of neurological manifestations were identified –acute stroke, new or recrudescent seizures, altered mentation with normal imaging, and neuro-COVID-19 complex. Factors present on admission were analyzed as potential predictors of in-hospital mortality, including sociodemographic variables, pre-existing comorbidities, vital-signs, laboratory values, and pattern of neurological manifestations. Significant predictors were incorporated into a disease-severity score. Patients with neurological manifestations were matched with patients of the same age and disease severity to assess the risk of death.

Results:
4711 patients with confirmed SARS-Cov2 infection were admitted to one medical system in New York City during a 6-week period. Of these, 581 (12%) had neurological issues of sufficient concern to warrant neuro-imaging. These patients were compared to 1743 non-neurological COVID-19 patients matched for age and disease-severity admitted during the same period. Patients with altered mentation (n=258, p =0.04, OR 1.39, CI 1.04 – 1.86) or radiologically confirmed stroke (n=55, p = 0.001, OR 3.1, CI 1.65-5.92) had a higher risk of mortality than age and severity-matched controls.

Conclusions:
The incidence of altered mentation or stroke on admission predicts a modest but significantly higher risk of in-hospital mortality independent of disease severity. While other biomarker factors also predict mortality, measures to identify and treat such patients may be important in reducing overall mortality of COVID-19.

Biography:
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