Global Research Highlights

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Sedative Dose for Rapid Sequence Intubation and Post-intubation Hypotension: Is There an Association?

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Study objective

For patients with hemodynamic instability undergoing rapid sequence intubation, experts recommend reducing the sedative medication dose to minimize the risk of further hemodynamic deterioration. Scant data support this practice for etomidate and ketamine. We sought to determine if the dose of etomidate or ketamine was independently associated with postintubation hypotension.

Methods

We analyzed data from the National Emergency Airway Registry from January 2016 to December 2018. Patients aged 14 years or older were included if the first intubation attempt was facilitated with etomidate or ketamine. We used multivariable modeling to determine whether drug dose in milligrams per kilogram of patient weight was independently associated with postintubation hypotension (systolic blood pressure < 100 mm Hg).

Results

We analyzed 12,175 intubation encounters facilitated by etomidate and 1,849 facilitated by ketamine. The median drug doses were 0.28 mg/kg (interquartile range [IQR] 0.22 mg/kg to 0.32 mg/kg) for etomidate and 1.33 mg/kg (IQR 1 mg/kg to 1.8 mg/kg) for ketamine. Postintubation hypotension occurred in 1,976 patients (16.2%) who received etomidate and in 537 patients (29.0%) who received ketamine. In multivariable models, neither the etomidate dose (adjusted odds ratio [aOR] 0.95, 95% confidence interval [CI] 0.90 to 1.01) nor ketamine dose (aOR 0.97, 95% CI 0.81 to 1.17) was associated with postintubation hypotension. Results were similar in sensitivity analyses excluding patients with preintubation hypotension and including only patients intubated for shock.
Conclusion

In this large registry of patients intubated after receiving either etomidate or ketamine, we observed no association between the weight-based sedative dose and postintubation hypotension.

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Sarcopenia measured with paraspinous muscle using computed tomography for predicting prognosis in elderly pneumonia patients

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Abstract

Background

In the elderly, diagnostic findings of pneumonia are often atypical. Computed tomography was recommended for the diagnosis of pneumonia in elderly patients. Recently, the usage of computed tomography as a screening tool for pneumonia in emergency departments has increased. Sarcopenia is defined as the loss of skeletal muscle mass and strength with aging. In this study, the association between sarcopenia and prognosis measured through computed tomography was evaluated compared to CURB-65.

Methods

This study was conducted on patients diagnosed with pneumonia through computed tomography from 1 March 2018 to 31 March 2020. The paraspinous muscle size and attenuation were measured at a level located at the T12 pedicle level on axial computed tomography images. Paraspinous muscle size was presented as paraspinous muscle index. Differences in the prognostic performance among the paraspinous muscle size and attenuation, and CURB-65 were evaluated by the area under the receiver operating characteristic curve.

Results

A total of 509 patients were included and 132 patients (25.9%) were admitted to the ICU, and 58 patients (11.4%) died in hospital. Paraspinous muscle index was the significant factor for predicting in-hospital mortality and ICU admission. The area under the receiver operating characteristic value of paraspinous muscle index for prediction of mortality was 0.738 and CURB-65 was 0.707. The area under the receiver operating characteristic of paraspinous muscle index and CURB-65 for predicting ICU admission were 0.766 and 0.704, respectively.

Conclusion

As a method of measuring sarcopenia, paraspinous muscle index was superior to CURB-65 in elderly pneumonia patients. The use of computed tomography in predicting prognosis for elderly pneumonia patients will ease the economic burden.