



## Brief Report

## Predicting the need for critical care intervention in community acquired pneumonia



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We have greatly enjoyed reading the recently published article by Ehsanpoor and colleagues [1]. In this prospective study 143 patients with clinical suspicion of community-acquired pneumonia (CAP), were enrolled. The authors found that SMART-COP score  $\geq 5$  had a high sensitivity and specificity in the prediction of patients' prognosis with severe CAP.

Existing severity scores are designed to predict 30-day mortality in CAP and they are heavily weighted by age and co-morbidity. They perform less well when predicting other outcomes such as requirement for critical care intervention or requirement for vasopressor support and mechanical ventilation. Their low sensitivity may incorrectly diagnose and manage patients with CAP as nonsevere when, in fact, they are at higher risk of death. In order to predict the need for intensive respiratory and vasopressor support, Charles et al. developed the SMART-COP [2] score and found that the presence of  $>3$  points identified 92% of patients who received intensive respiratory care or vasopressor support, which included 84% of patients who did not need immediate admission to the intensive care unit.

The two most widely used scores, the Pneumonia Severity Index and the CURB65 score, were developed to predict 30-day mortality in patients with CAP. However, several recent studies, including the study by Ilg and colleagues [3], have challenged us to re-evaluate how we consider severe CAP. In this recently published retrospective study, Ilg et al. included 2322 CAP patients for the need of critical care intervention [3]. Of the study cohort, 1159 (49.9%) had a CURB-65 score of 0 to 1, 826 (35.6%) had a score of 2, and 337 (14.5%) had a score greater than or equal to 3. The authors found that mortality was low (0.6%) for patients with CURB-65 scores of 0 to 1 however, many of these patients required intensive care unit admission and received a critical care intervention. These results suggested that although it is useful in predicting mortality, CURB-65 does not appear to make clinically useful predictions about the level of inpatient care a patient will require.

Recently, biomarkers have become a popular clinical tool to help physicians predict severity of CAP [4]. The combination of biomarkers and clinical scores has shown promising results in predicting mortality and adverse outcomes in CAP. Current data showed that, when added to the Pneumonia Severity Index and CURB-65 score, procalcitonin, C-reactive protein and B-type natriuretic peptide enhances the likelihood of predicting mortality and complications in patients with CAP [4,5].

Therefore, we think that Ehsanpoor and colleagues may assess whether the addition of biomarkers would change the performance of established pneumonia severity scores, including the pneumonia severity index, SMART-COP and CURB-65 scores, for the prediction of the need for intensive care among adults with CAP.

### References

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