Background: Leukocytosis is a known predictor of infection and inflammation; leukopenia is an established marker of immunocompromise. The degree of leukocytosis, however, may provide additional information to clinicians treating critically ill patients. Our aim was to determine if peak leukocyte count could help clinicians diagnose and prognose patients.

Methods: This was a retrospective cohort study of patients admitted to six adult intensive care units at a US academic medical center between 2001 and 2012. Our primary aim was to determine the most commonly encountered diagnoses in patients with different peak leukocyte counts. Our secondary analyses were to determine the length of stay and mortality associated with peak leukocyte count across diagnoses and determine, using multiple logistic regression, whether peak WBC count was more predictive of mortality than other diagnostic and demographic variables.

Results: There were 45,340 patients in our cohort. The rate of C. difficile was substantially higher in patients with extreme leukocytosis (peak leukocyte ≥ 40,000; 12% compared to 1-2% in all other groups, p<0.001). In our multivariate regression, extreme leukocytosis was associated with very high mortality rates (adjusted odds ratio 10.4, 95% CI: 8.5-12.7, p<0.001).

Conclusions: Degree of peak leukocytosis in critically ill patients provides valuable diagnostic and prognostic information. Having an understanding of the conditions associated with each category of peak WBC count can help clinicians in caring for patients in the intensive care unit. In particular, extreme leukocytosis signals a very high risk of mortality and may indicate the need for more aggressive or urgent intervention.

Themes:

Check (highlight) the most applicable theme according to the abstract.

<table>
<thead>
<tr>
<th>Innovation and Technology</th>
<th>Health and Wellness</th>
<th>Culture and Society</th>
<th>Sustainability and Conservation</th>
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Comments:

The biggest takeaway from this review is to revise your abstract to fit a generalist audience. Think about how a nonspecialist in your field of expertise were to listen to you about your research: how would you frame it? Understanding that you are limited to 250 words and you may have to define some terms (see comments), limit each section to 2 sentences.