

Red Flag Sepsis for Prediction of In-Hospital Mortality

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Background and Aims

Sepsis is a life-threatening multi-organ dysfunction that occurs due to a dysregulated immune response to infection. It carries significant morbidity and mortality, and early identification is essential.

We aimed to evaluate the predictive value of routinely collected clinical observations (in particular Red Flag Sepsis [RFS]) in order to identify highest risk patients diagnosed with Sepsis. This was the first step of a quality improvement (QI) project. After completion of the second part of the project (expected by 12/2019), we hope our results will inform subsequent electronic data gathering and future clinical practice.

Methods

We analysed the data from patients that arrived in the Emergency Department (ED) of two tertiary academic hospitals with signs of infection and were assessed by a clinician. If Sepsis was suspected, the "Sepsis 6 Order Set" was activated. The order was later identified by a data manager, who reviewed the clinical data and collected the desired parameters on Excel.

Binary logistic regression and Chi-square test were performed with IBM-SPSS to assess the impact of systolic blood pressure, lactate, heart rate, patient response/unresponsive, respiratory rate, oxygen saturations and rash on the likelihood that patients would survive or die.

Results

117 patients aged >18 years were included in the study. In-hospital outcome was tested with each of the RFS variables. The only statistically significant RFS for predicting in-hospital mortality was lactate >2mmol/L (OR: 8.906; CI 1.8-44.073; $p=0.007$).

Conclusions

In summary, of the RFS, only lactate >2mmol/L was statistically significant for prediction of in-hospital mortality. The analysis also showed that "Sepsis 6" is currently imperfectly adhered to, and that paper-based data collection has limitations; we will next test the RFS with electronic data only.