

Poor sensitivity of the qSOFA assessment when deployed as a stand alone screening tool for sepsis in adult inpatients at a large District General Hospital

RM Gray¹, Surridge M², Shine C³, Lafbery S², Kandil H¹, Vaghela T⁴
Microbiology Department¹, Corporate Nursing², Emergency Department³,
Pharmacy Department⁴
Watford General Hospital, West Hertfordshire Hospitals NHS Trust



Introduction

Sepsis, defined as a life-threatening organ dysfunction due to a dysregulated host response to infection, has a case mortality rate in the UK of around 30%. Despite this, it has been long considered that recognising the early signs of sepsis is challenging. Multiple initiatives have targeted improving the early recognition of sepsis.

The quick Sequential Organ Failure Assessment or qSOFA has gained prominence as a bedside test for detecting sepsis. It requires three parameters to be measured: blood pressure, respiratory rate and acute alteration in mental state. Presence of two positive parameters out of three was shown from datasets of over 700,000 patients to predict higher mortality if treated in the non-ICU setting. Its ease of use and strong predictive value of poor clinical outcome has led many to propose its use as a bedside prompt to screen for sepsis.

Here we report the results of an audit evaluating the use of qSOFA as an early prompt for sepsis in the assessment of adult inpatients at Watford General, a large district general hospital.

From April 2017 The qSOFA score was added to the clerking proforma for adult admissions at Watford General under the banner "Think Sepsis". As qSOFA is not recommended as a stand alone screening tool, an audit was carried out to assess its effectiveness.

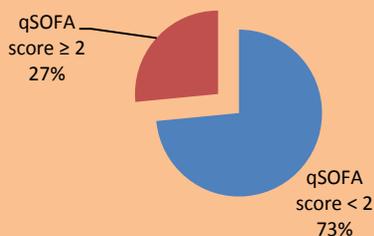
Method

During a six month period in 2018, a sepsis nurse and lead antimicrobial pharmacist identified 279 patients on 16 inpatient wards with clear evidence of sepsis (using NEWS score; sepsis red flags; new rise in inflammatory markers; clinical concern and clinician commencement of intravenous antibiotics). The data was analysed retrospectively to see whether the patient had triggered a qSOFA score of 2 or more at the time that sepsis was suspected.

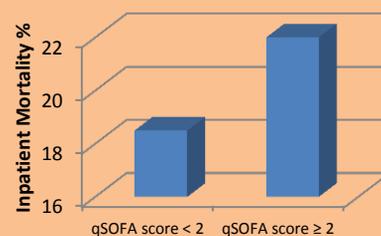
Results

26.5 % (74 out of 279) patients triggered a qSOFA score of 2 or more, indicating probable sepsis with risk of an adverse outcome. Inpatient mortality among all patients studied was 19.3%. Positive qSOFA score was found to increase the likelihood of inpatient mortality: 22% vs 18.5% (Odds Ratio of death = 1.2) but the difference in mortality was not statistically significant (95% Confidence Interval 0.63 to 2.33, p=0.57).

The quick Sequential Organ Failure Assessment Scores



Positive quick SOFA score and inpatient mortality



Conclusion

This retrospective study determined the sensitivity of a qSOFA value of 2 or more as only 27% sensitive when used at a single point of assessment for the recognition of sepsis. It did however associate with a higher rate of mortality, although this association was not statistically significant in this limited-sized study. Nevertheless these results support the conclusion of the qSOFA score developers that the assessment tool should not be used in isolation as a standalone sepsis screen.

References:

1. The Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) *JAMA*. 2016;315(8):801-810