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RISK FACTORS AND DIAGNOSTIC MARKERS OF BACTERAEMIA IN STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS: A COHORT STUDY OF 176 PATIENTS
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Aims: Sepsis is the main cause of death in Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN). Our aim is to identify admission risk factors predictive of bacteraemia and accompanying clinical and/or biochemical markers associated with positive blood cultures to rapidly detect bacteraemia in SJS-TEN patients.

Methods: A retrospective cohort study of consecutive patients admitted to a tertiary hospital over a 14-year period (2003-2016) for SJS-TEN spectrum was performed. Demographics, clinical features, laboratory investigations and SCORTEN within the first 24-hours of hospitalization were collected to predict development of bacteraemia. Temperature and laboratory results taken within 24-hours of blood culture collection were recorded to predict blood culture positivity.

Results: The study included 176 patients, comprising SJS (n=59), SJS/TEN overlap (n=51) and TEN (n=66). Fifty-two patients (29.5%) developed bacteraemia during hospitalisation and had poorer outcomes including higher ICU admission (OR 6.8, 95% CI 3.1-15.0, p<0.0005), longer length of stay (p<0.0005) and higher mortality (OR 4.4, 95% CI 2.1-9.1, p<0.0005). There were 112 bacteraemic episodes and isolates include Acinetobacter baumannii (n=31, 27.7%) and Staphylococcus aureus (n=24, 21.4%). On multivariate analysis, admission clinical factors predictive of bacteraemia include haemoglobin≤10g/dL (OR 2.4, 95% CI 2.2-2.6, p<0.0001), existing cardiovascular disease (OR 2.10, 95% CI 2.0-2.3, p<0.0001) and BSA≥10% (OR 14.3, 95% CI 13.4-15.2, p<0.0001). The Bacteraemia Risk Score (BRS) was constructed with good calibration and discrimination (bootstrap-corrected C-statistic=0.76). BRS≥2 is strongly predictive of bacteraemia (negative predictive value: 98.2% and positive predictive value: 43.1%). Hypothermia (OR 2.4, 95% CI 1.1-5.3, p=0.03) and pro-calcitonin≥1ug/L (OR 2.4, 95% CI 1.1-4.8, p=0.02) concurrent with blood culture sampling were predictive of blood culture positivity.

Conclusion: Haemoglobin≤10g/dL, existing cardiovascular disease and BSA≥10% on admission were risk factors for bacteraemia. Presence of hypothermia and elevated pro-calcitonin are useful markers for the timely detection of bacteraemia.