



ADVERSE DRUG REACTIONS, INCLUDING SJS, TEN

RISK FACTORS AND DIAGNOSTIC MARKERS OF BACTERAEMIA IN STEVENS-JOHNSON SYNDROME AND TOXIC EPIDERMAL NECROLYSIS

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Introduction: Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are severe mucocutaneous adverse reactions with high mortality rates. Sepsis is the main cause of death, with impaired skin barrier increasing risk of bacteraemia. Identifying patients at risk of bacteraemia and initiating timely antibiotics when bacteraemia is suspected are essential to improve outcomes. However, predictive risk factors at admission are not well-defined. Similarly, identifying clinical/biochemical features of bacteraemia/sepsis is challenging as systemic inflammatory response syndrome following SJS-TEN mimics signs of infection.

Objective: Our primary aim is to identify risk factors on admission predictive of subsequent bacteraemia, with the secondary aim of identifying accompanying clinical and/or biochemical markers associated with positive blood cultures.

Materials and Methods: A retrospective study of consecutive patients admitted to a tertiary hospital over a 14-year period (2003-2016) for SJS-TEN spectrum was performed. Patient demographics, comorbidities and laboratory results within 24 hours of admission were reviewed to predict development of bacteraemia. Temperature and laboratory results concurrent with blood cultures were reviewed to predict positive blood culture results.

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. Of 112 microorganism occurrences, 31 (27.7%) were *Acinetobacter baumannii* and 16 (14.3%) were methicillin-resistant *Staphylococcus aureus*. Multivariate analysis found haemoglobin $\leq 10\text{g/dL}$ (OR=2.41; CI 2.24,2.59), cardiovascular disease (OR=2.10; CI 1.95,2.27) and total body surface area (BSA) involved $\geq 10\%$ (OR=14.26; CI 13.35,15.23) on admission predictive of subsequent bacteraemia. Consequently, a risk score with bootstrap-corrected C-statistic of 0.76 and good calibration was constructed. Hypothermia





(<36.0°C) and procalcitonin $\geq 1\mu\text{g/L}$ concurrent with blood cultures were predictive of bacteraemia (OR=2.39; CI 1.08,5.27, and OR=2.35; CI 1.14,4.84, respectively).

Conclusions: Haemoglobin $\leq 10\text{g/dL}$, cardiovascular disease, BSA $\geq 10\%$ on admission were risk factors for subsequent bacteraemia. The risk score helps to delineate higher risk groups for closer monitoring and timely interventions.

