INPLASY

Corresponding author:
Thomas Stewart

thomas_stewart@live.com

Author Affiliation:
University of New South Wales.

A systematic review and meta-analysis of Non-SCORTEN mortality predictors in Stevens Johnson syndrome and toxic epidermal necrolysis

Stewart, TJ; Chan, J; Frew, JW.

ADMINISTRATIVE INFORMATION

Support - Nil.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202440005

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 02 April 2024 and was last updated on 02 April 2024.

INTRODUCTION

*R*eview question / Objective To determine the Non-SCORTEN predictors for mortality in Stevens Johnson syndrome and toxic epidermal necrolysis.

Rationale Stevens Johnson syndrome and toxic epidermal necrolysis are associated with high rates of mortality. Several risk factors and risk factor models (SCORTEN and ABCD-10) to predict mortality have been proposed however they are imperfect in their performance.

Condition being studied Stevens Johnson syndrome; Toxic epidermal necrolysis.

METHODS

Search strategy Terms

– Stevens Johnson syndrome OR toxic epidermal necrolysis OR SJS OR TEN OR epidermal necrolysis OR Lyell syndrome AND
– risk factor OR predictor OR association OR determinant AND
– mortality OR survival OR death OR died OR death
Electronic databased
– Pubmed
– Web of science
– Scopus
– Embase.

Participant or population Adult patients with Stevens Johnson syndrome or toxic epidermal necrolysis.

Intervention Nil.

Comparator Nil.

Study designs to be included Cohort, cross-sectional, case-control.

Eligibility criteria Inclusion criteria - Studies of non-SCORTEN predictors of mortality in adults with Stevens Johnson syndrome and/or toxic epidermal necrolysis. Exclusion criteria (1) Studies evaluating SCORTEN mortality predictors exclusively (ie. patient age, malignancy, heart rate, body surface area percentage of epidermal detachment, serum bicarbonate, serum urea, serum glucose level), (2) Therapeutic or interventional studies, (3) Studies in which Stevens Johnson syndrome and toxic epidermal necrolysis cases could not be differentiated from other skin conditions (e.g. DRESS, AGEP, erythema multiforme), (4) Studies that included paediatric cases in which the adult cases could not be differentiated, (5) Case series and case reports, (6) Studies written in a language other than English.

Information sources Electronic databases.

Main outcome(s) Non-SCORTEN predictors of mortality in adults with Stevens Johnson syndrome and toxic epidermal necrolysis
SCORTEN factors are age, malignancy, heart rate, body surface area percentage of epidermal detachment, serum bicarbonate level, serum glucose level, serum blood urea nitrogen level.

Additional outcome(s) Nil.

Data management This systematic review was conducted in accordance with the PRISMA guidelines. Data collection was performed independently by two authors (TJS and JC) with any disagreements regarding inclusion of the citations being referred to a third author (JWF) for mediation. Information will be collected using a standardised data collection form with the principal outcomes of interest being the non-SCORTEN predictors of mortality. If data from individual patients is unavailable, the aggregate data, including average change and statistical analyses of the significance of change will be collected.

Quality assessment / Risk of bias analysis Data collection was performed independently by two authors (TJS and JC) with any disagreements regarding inclusion of the citations being referred to a third author (JWF) for mediation. Information will be collected using a standardised data collection form with the principal outcomes of interest being the non-SCORTEN predictors of mortality. If data from individual patients is unavailable, the aggregate data, including average change and statistical analyses of the significance of change will be collected.

Strategy of data synthesis Following full-text screening, studies will be deemed eligible/ineligible for data extraction. The cases involving non-SCORTEN mortality predictors will be pooled and predictors reported in more than five studies will be subjected to quantitative analysis. Statistical analyses will be performed with RStudio 4.3.1 (RStudio: Integrated Development for R. RStudio, PBC, Boston, MA URL http://www.rstudio.com/) using packages meta 6.5-0 (Schwarzer, 2023) and dmetar (Harrer et al. 2019). Meta-analyses will be performed with metaprop function and presented as a Forest plot. A Funnel plot will be constructed to create a visual representation of whether small-study effects are present. Linear regression and Egger's tests will then be used to quantitatively assess for plot asymmetry.

Subgroup analysis Not applicable.

Sensitivity analysis Not applicable.

Language restriction English.

Country(ies) involved Australia.

Other relevant information Nil

Keywords Stevens Johnson syndrome, toxic epidermal necrolysis, mortality, predictors, risk factors.

Dissemination plans Publish in a medical journal. Present at medical conference/s.

Contributions of each author
Author 1 - Thomas Stewart - Define inclusion and exclusion criteria; Develop search strategy and locate studies; Select studies; Extract data; Disseminate findings.
Email: thomas_stewart@live.com
Author 2 - Jeremy Chan -Define inclusion and exclusion criteria; Develop search strategy and locate studies; Select studies; Extract data; Disseminate findings.
Email: jeremychan0202@gmail.com
Author 3 - John Frew - Formulate the review question; Assess study quality; Analyse and interpret results; Disseminate findings.
Email: jwfrew@gmail.com