International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

Inclusion of patients with hospital-onset sepsis in sepsis trials: A scoping review protocol

INPLASY202460036
doi: 10.37766/inplasy2024.6.0036
Received: 10 June 2024
Published: 10 June 2024

Corresponding author:
Elizabeth Munroe

munroeel@med.umich.edu

Author Affiliation:
University of Michigan.

Munroe, E; Bani Kenana, R; Capellini, A; Cho, TJ; Papaioannou, P; Prescott, HC.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Piloting of the study selection process.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202460036

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 June 2024 and was last updated on 10 June 2024.

INTRODUCTION

Review question / Objective In clinical trials of patients with sepsis, how are often are patients with hospital-onset sepsis included?

Background Most sepsis research focuses on patients with community-onset sepsis—patients who present to the Emergency Department with sepsis. However, hospital-onset sepsis (sepsis that develops in the hospital) has a higher mortality than community-onset sepsis and accounts for 1 in 3 sepsis deaths. Recent studies have also found that patients with hospital-onset sepsis have different characteristics than patients with community-onset sepsis, for example a higher prevalence of baseline heart disease and renal failure and higher need for mechanical ventilation and renal replacement therapy. Therefore, it may be important to distinguish location of sepsis onset when studying sepsis management.

Rationale The goal of this scoping review is to determine how often patients with hospital-onset sepsis are included in sepsis trials. In current guidelines and practice, results from clinical trials in sepsis are often applied ubiquitously to all patients with sepsis. Yet, several prominent trials of sepsis management focused solely on patients with community-onset sepsis. We need to understand how well patients with hospital-onset sepsis are represented in sepsis trials to understand whether treatments evaluated in these trials (e.g., fluid resuscitation, vasopressor management, therapeutics) can be applied to patients with hospital-onset sepsis.

METHODS

Strategy of data synthesis

1. Title/Abstract review: Each Title/Abstract will be reviewed by 2 authors.
2. Full Text review: Articles meeting eligibility criteria in Title/Abstract review will be included for full text review to confirm that they meet eligibility

criteria. Any articles excluded at this stage will be double reviewed.
3. Data extraction: All reviewers will perform data extraction on the first 10 articles independently and will meet to discuss discrepancies. Additional extractions will be done as a group as needed, until there are minimal discrepancies between reviewers. After this, data will be extracted by 1 reviewer per article using the standardized abstraction form. Extracted data will include study characteristics (e.g., publication date, setting, inclusion/exclusion criteria, sample size, intervention, primary outcome), patient characteristics (e.g., overall mortality rate) and information about the inclusion of patients with hospital-onset sepsis (e.g., inclusion of patients with hospital-onset sepsis: yes/no, proportion of patients with hospital vs community-onset sepsis, and location of enrollment of patients with hospital-onset sepsis if reported (e.g., ICU, ward, OR)).

Eligibility criteria Inclusion Criteria: All randomized clinical trials of adult patients with sepsis or septic shock (as defined by the authors) published from 2000-2024 in a top 14 critical care or internal medicine journal (See list below).

Exclusion Criteria: The following studies will be excluded: 1) trials whose primary patient population is not patients with sepsis or septic shock, 2) trials focused on pediatric patients, 3) non-human studies, 4) studies published before January 1, 2000, 5) studies not available as full text articles (e.g., only available as conference abstract), and 6) studies not available in English.

Journal list: included journals
American journal of respiratory and critical care medicine (AJRCCM)
Annals of the American Thoracic Society (Annals of ATS)
Annals of internal medicine
British medical journal (BMJ)
Chest
Critical Care
Critical care medicine
Intensive care medicine
JAMA
JAMA Internal Medicine
The Lancet
The Lancet Infectious Diseases
The Lancet Respiratory Medicine
The New England journal of medicine (NEJM).

Source of evidence screening and selection We will search Pubmed and Embase using Boolean operators, Boolean logic, and controlled vocabulary for each key word. In PubMed, we will search "sepsis" or "septic shock" in title, abstract, MeSH terms, or other terms AND available clinical trial terms and synonyms in publication type, title, abstract, MeSH, or other terms. We will narrow the search by date range (published after Jan. 1, 2000) and to the top 14 critical care and internal medicine journals (see list above). We set no limits on participant age, language, or article availability. We will perform a similar search in EMBASE, with search criteria adapted to the search format of this database.

Data management The review will be conducted in Covidence. Extraction will be performed in RedCap.

Reporting results / Analysis of the evidence We will first assess whether location of sepsis onset is reported. In trials reporting location of sepsis onset, we will evaluate the proportion of trials that include patients with: a) only community-onset sepsis, b) only hospital-onset sepsis, and c) both. Finally, in any trial that includes patients with hospital-onset sepsis, we will assess 1) the breakdown of patients who had hospital vs community-onset sepsis in the trial, and 2) location of sepsis onset among patients with hospital-onset sepsis (i.e., floor/ward, ICU, OR, PACU, other, not reported). If there are enough trials that meet study eligibility criteria, we will conduct subgroup analyses to evaluate the proportion of trials enrolling patients with hospital-onset sepsis by various trial characteristics, such as trial type (pilot/feasibility, phase I or II, phase III or IV), trial size (e.g., single vs multi-center), intervention type [e.g., novel drug, novel technology/device, resuscitation approach (e.g., fluid strategy, vasopressor agent), existing therapeutic (e.g., thiamine, vitamin C, steroids)], outcome type (e.g., mortality, surrogate clinical outcome such as ventilator-free days, or biomarker), publication date (e.g., 2000-2005, 2005-2010, 2010-2015,2015-present).

Presentation of the results Data presentation will include: 1) a consort diagram of study selection, including reasons for exclusion through the Title/Abstract and Full Text review stages, 2) a table of general study and patient characteristics, and 3) presentation of results for the proportion of trials enrolling patients with hospital-onset sepsis and enrollment locations.

Language restriction English.

Country(ies) involved United States.

Keywords Sepsis; hospital-acquired sepsis; hospital-onset sepsis; community-acquired sepsis; community-onset sepsis; clinical trials.

Dissemination plans We will publish results as a manuscript and will present them at a critical care society conference.

Contributions of each author

Author 1 - Elizabeth Munroe - Design of search criteria and analysis plan, reviewer, drafting of manuscript.
Email: munroeel@med.umich.edu
Author 2 - Raya Bani Kenana - Reviewer, drafting manuscript.
Author 3 - Philip Papaioannou - Reviewer, drafting manuscript.
Author 4 - Thomas Cho - Reviewer, drafting manuscript.
Author 5 - Alexandra Capellini - Reviewer, drafting manuscript.
Author 6 - Hallie Prescott - senior author, oversight, resolution of conflicts, writing of manuscript.