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SUPPLEMENTARY MATERIAL

Biomarkers for the diagnosis and prognosis of sepsis according to its infectious source: a scoping review

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Supplementary Material 1. PRISMA-ScR Checklist

This checklist follows the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018). Methodological framework derived from the Joanna Briggs Institute (JBI) Manual for Evidence Synthesis.

Section	Item	Description	Status in This Review
TITLE	1	Identify the report as a scoping review.	Title explicitly states "A Scoping Review."
ABSTRACT	2	Provide a structured summary including background, objectives, methods, results, and conclusions.	Structured abstract with all required elements.
INTRODUCTION	3	Describe the rationale for the review in the context of existing knowledge.	The introduction provides a comprehensive rationale highlighting biomarker variability by infection source.
	4	State the objectives or questions the review addresses.	Objective clearly defined: to map and classify diagnostic and prognostic biomarkers according to their infectious source.
METHODS	5	Indicate whether a review protocol exists and where it can be accessed.	A protocol was developed following the JBI methodology and PRISMA-ScR framework; registration in OSF is planned but not yet completed.
	6	Specify eligibility criteria (inclusion/exclusion).	Inclusion: systematic reviews, meta-analyses, and cohort studies (2019–2025) in English or Spanish, focused on diagnostic/prognostic biomarkers of sepsis. Exclusion:
	7	Describe all information sources.	PubMed, ScienceDirect, SciELO, and Google Scholar.
	8	Present the full search strategy, including keywords and limits.	MeSH and free-text terms combined with Boolean operators (AND, OR) adapted per database; limited to English/Spanish publications (2019–2025).
	9	State the process for selecting sources of evidence (screening and eligibility).	Two reviewers (VL and RA) screened titles and abstracts independently; disagreements resolved by consensus or third reviewer (LT).
	10	Describe the data-charting process.	Data extracted independently by VL and RA using a structured form; LT verified data consistency.
	11	List and define all variables and data items extracted.	Study title, authors, year, country, design, biomarker type (classical/omics), infection source, diagnostic/prognostic role, funding source, and key outcomes.
	12	Describe any critical appraisal of sources (if applicable).	No formal quality appraisal performed, consistent with JBI guidance for scoping reviews.
	13	Describe methods for summarizing and analyzing data.	Descriptive synthesis and mapping by infectious source and biomarker function (diagnostic/prognostic).

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Supplementary Material 1. PRISMA-ScR Checklist (Continuation)

Section	Item	Description	Status in This Review
RESULTS	14	Provide a flow diagram and summary of evidence selection.	PRISMA-ScR flow diagram included as Figure 1.
	15	Present characteristics of included studies.	Table 1 summarizes design, biomarkers, infection focus, and main findings for 16 studies.
DISCUSSION	16	Present main results and mapping of data.	Results section details biomarkers per infection source: pulmonary, urinary, intra-abdominal, and skin/soft tissue.
	17	Summarize main findings and identify research gaps.	Discussion highlights key biomarkers, evidence variability, and need for multicenter validation.
	18	Discuss limitations of the scoping review process.	Recognizes limited sample sizes, heterogeneity, and language/ database restrictions.
	19	Provide general conclusions and implications for research/practice.	Conclusions emphasize integrating classical and emerging biomarkers, recommending validation of combined panels.
FUNDING & SUPPORT 20		Describe sources of funding and potential conflicts of interest.	Self-funded; authors declare no conflicts of interest.

Supplementary Material 2. Funding Characteristics of Included Studies (n = 16)

No.	Article	Reported source of funding	Classification
1	A Systematic Review of Gene Expression Studies in Critically Ill Patients with Sepsis and Community-Acquired Pneumonia[6]	Instituto de Salud Carlos III (Spain)	Government
2	Low Admission Plasma Gelsolin Concentrations Identify Community-acquired Pneumonia Patients at High Risk for Severe Outcomes[15]	BioAegis Therapeutics Inc.	Industry
3	Valor del biomarcador tirosina quinasa 1 soluble tipo fms (sFLT-1) en el diagnóstico y pronóstico de la sepsis: una revisión sistemática[13]	Caja Rural de Soria; Instituto de Salud Carlos III; Junta de Castilla y León; Fundación Ramón Areces	Mixed (Government + Foundation)
4	Presepsin as a Novel Biomarker in predicting In-hospital Mortality in Patients With COVID-19 Pneumonia[11]	No specific funding declared	Declared "no funding"
5	Prospective multicenter study identifying prognostic biomarkers and microbial profiles in severe CAP using BALF, blood mNGS, and PBMC transcriptomics[17]	Funded by Chinese national and regional government research programs	Government
6	Preoperative inflammatory biomarkers analysis in prognosis of systemic inflammatory response syndrome following percutaneous nephrolithotomy: A systematic review and meta-analysis[21]	Not reported	Not reported
7	Biomarkers for the diagnosis of sepsis-associated acute kidney injury: systematic review and meta- analysis[26]	Funded by Konkuk University Medical Center (South Korea)	Academia
8	Related factors of bloodstream infections associated with urinary tract infections and pathogenetic characteristics analysis[22]	Funded by Ningxia Hui Autonomous Region Key Research and Development Plan Project (China)	Government
9	Presepsin as a predictor of septic shock and mortality in patients with urinary tract infection according to the Sepsis-3 definitions[27]	Funded by Konkuk University Medical Center Research Grant 2023	Government
10	Comparing the Prognostic Value of Lactate to the Neutrophil-to-Lymphocyte Ratio Among Sepsis Patients: A Prospective Cohort Study[29]	No specific funding declared	Declared "no funding"
11	Associations between YKL-40 and markers of disease severity and death in patients with necrotizing soft-tissue infection[39]	Funded by Innovation Fund Denmark, EU Horizon 2020, Nordforsk, and Copenhagen University Hospital	
12	Utility of the Lactate/Albumin Ratio as a Predictor for Mortality in Necrotizing Fasciitis Patients[40]	Chang Gung Memorial Hospital Research Program	Academia
13	Evaluación de la proteína C reactiva, la procalcitonina y el índice PCR/PCT como indicadores de mortalidad en sepsis abdominal[36]	Not reported	Not reported
14	Systematic review and meta- analysis of the diagnostic accuracy of procalcitonin for post-operative sepsis/infection in liver transplantation[37]	No specific funding declared	Declared "no funding"
15	The Role of the Pancreatic Stone Protein in Predicting Intra-Abdominal Infection-Related Complications: A Prospective Observational Single- Center Cohort Study[34]	Abionic S.A., Switzerland	Industry
16	Diagnostic Utility of IL18 Plasma Levels in Distinguishing Abdominal from NonAbdominal Sepsis[32]	DFG – German Research Foundation	Government