GenexAI

Accelerating Evidence Assessment with AI

Leveraging AI to streamline the assessment and synthesis of evidence across diverse sources

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There are about two biomedical papers published every minute

It is impossible to review, manage, and analyze the millions of scientific papers published every year

Traditional SLR process takes on average more than 67 weeks and over $140,000

*…**each year, we receive around 2.6 million research papers from authors.** These are carefully reviewed by our in-house editorial teams in collaboration with 32,000 editors and 1.4 million expert reviewers around the world…*

Source: Elsevier

ELSEVIER

How scientific publishing supports research: What authors are telling us

November 15, 2022 | 7 min read

By Laura Hassink

nature

Published: 20 July 2016

Scientific literature: Information overload

Esther Landhuis

*…In the biomedical field alone, **more than 1 million papers pour into the PubMed database each year — about two papers per minute**. For researchers who are already overwhelmed by bench and field work, grant-writing, publishing and other time-eaters, trying to navigate the growing deluge of data…has become a second job.*

Source: Nature

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Traditional Evidence Assessment Process

Literature Screening

Manual screening of thousands of study abstracts and titles to identify relevant studies based on pre-defined eligibility criteria.

Full-Text Review

In-depth review of full-text articles for final inclusion or exclusion based on strict eligibility criteria, often requiring multiple reviewers to reach consensus.

Data Extraction

Manually extracting relevant data elements from included studies, such as study characteristics, participant demographics, interventions, outcomes, and risk of bias assessments.

Quality Assessment

Rigorous quality control processes to ensure accuracy and consistency of screening decisions, data extraction, and risk of bias assessments.

Data Extraction

Extract relevant data and findings from the included studies or evidence using a standardized data extraction form or template.

Evidence Synthesis

Synthesize the extracted data and findings from the included studies or evidence using appropriate methods (e.g., meta-analysis, narrative synthesis) to generate overall conclusions and recommendations.

Report Writing

Prepare a comprehensive report or publication detailing the evidence assessment process, findings, and conclusions, including any limitations and recommendations for future research.

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Common Challenges

Human Error

Even the most diligent professionals can make mistakes, leading to inaccuracies in evidence assessment.

Cognitive Biases

Unconscious prejudices can distort judgment and decision-making during the assessment process.

Information Overload

The sheer volume of data and evidence can overwhelm analysts, making it challenging to identify relevant information.

These common challenges can impede the accuracy and efficiency of evidence assessment, highlighting the need for AI-driven solutions.

Impact on Regulatory Approvals and Product Launch Times

Traditional evidence assessment methods, characterized by manual processes and subjective interpretations, often lead to delays in regulatory approvals and product launch times. The lack of efficiency and inconsistency in these methods can prolong the time required for life-saving therapies to reach patients in need.

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The future of evidence assessment lies in the synergy between human expertise and AI capabilities, unlocking new frontiers of insight and efficiency.

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Advantages of using AI in evidence analysis

Increased Efficiency

- AI algorithms can rapidly process large volumes of data, streamlining the evidence assessment process and reducing the time required for human analysts.

Enhanced Accuracy

- AI models are adept at pattern recognition and can identify subtle correlations or anomalies within data that may be overlooked by human analysts, improving the accuracy of evidence assessment.

Objective Analysis

- AI systems are not subject to cognitive biases or preconceptions that can influence human decision-making, providing a more objective and impartial analysis of evidence.

Scalability

- AI-powered evidence assessment can be easily scaled to handle increasing data volumes and workloads, without the need for additional human resources.

Consistency

- AI models apply consistent decision-making criteria across all cases, ensuring a uniform and standardized approach to evidence assessment.

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GenexAI does not replace anyone, only manual tasks

So that you can focus on what matters most

Taking decisions

Time

5x faster

Costs

70-90% cheaper

Flexibility

Works in any language

Accurate

Responsible AI

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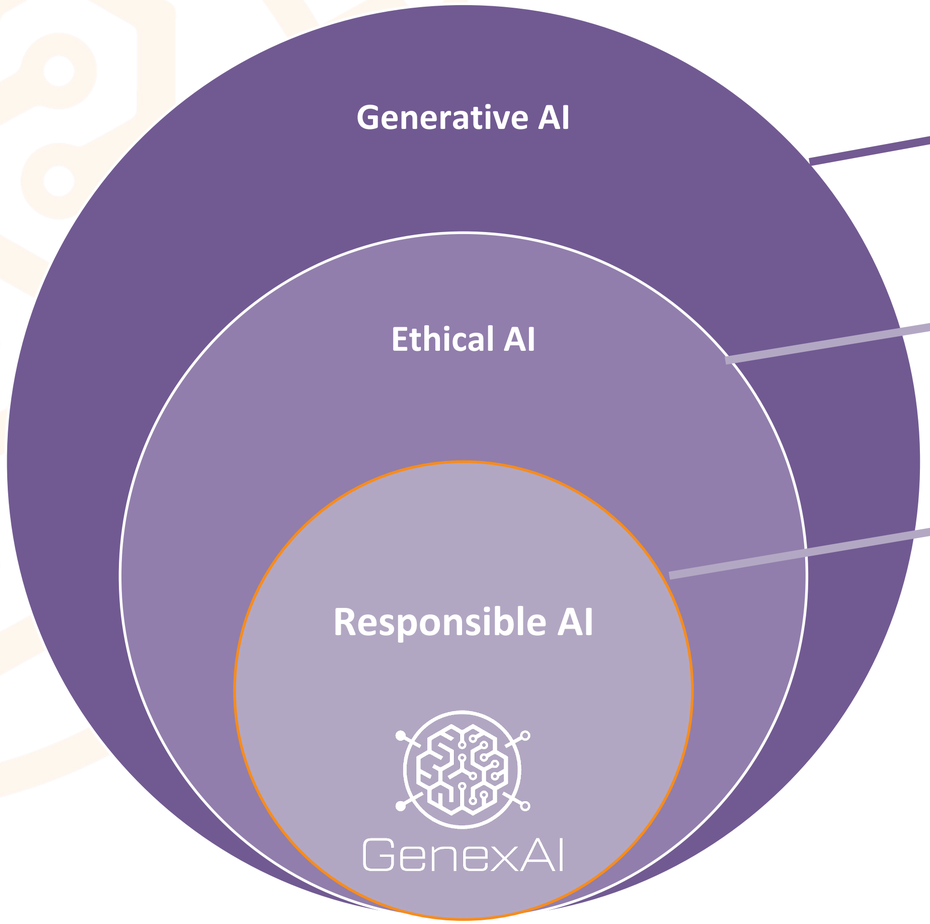
Using Responsible AI protocols, all GenexAI results are checked and validated by humans



AI-generated content

Process validated by humans

Process and results validated by humans

100% Traceable results

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The impact of GenexAI

Clinical

- Accelerate literature reviews with improved accuracy
- Rapid assessment of Standard of Care
- Identification of new indications

Regulatory

- Speed up post-market surveillance reports
- Accelerate Clinical Evaluation Reports, including SOTA
- Knowledge Base of your Technical Documentation

Market Access

- Identify tailored key value messages
- Accelerate the creation of Value Dossiers
- Support reimbursement applications

Review text, video and audio to connect the dots based on your needs to revolutionize the SLR process

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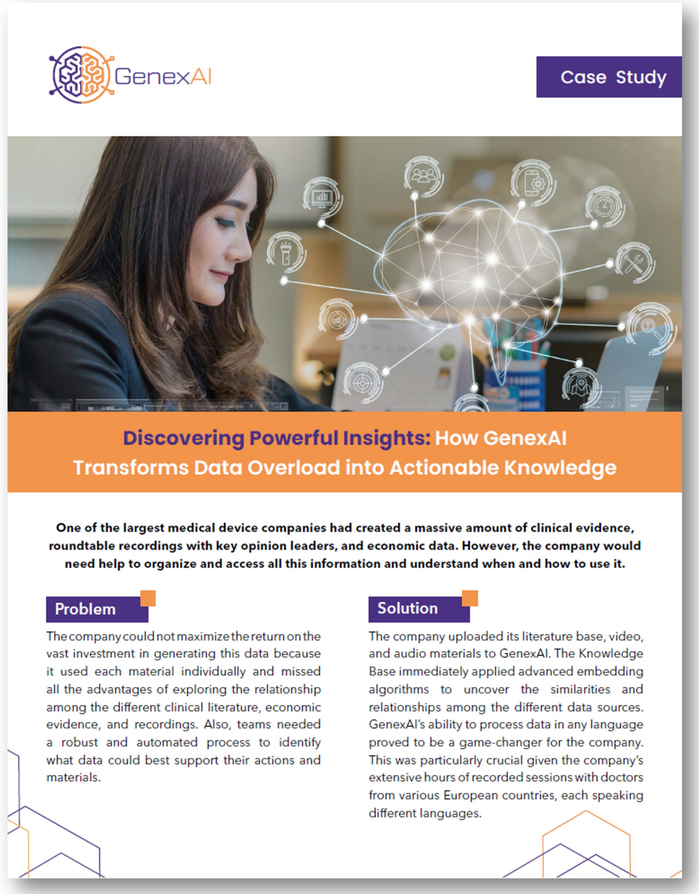
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Case Study

Discovering Powerful Insights: How GenexAI Transforms Data Overload into Actionable Knowledge

One of the largest medical device companies had created a massive amount of clinical evidence, roundtable recordings with key opinion leaders, and economic data. However, the company would need help to organize and access all this information and understand when and how to use it.

Problem

The company could not maximize the return on the vast investment in generating this data because it used each material individually and missed all the advantages of exploring the relationship among the different clinical literature, economic evidence, and recordings. Also, teams needed a robust and automated process to identify what data could best support their actions and materials.

Solution

The company uploaded its literature base, video, and audio materials to GenexAI. The Knowledge Base immediately applied advanced embedding algorithms to uncover the similarities and relationships among the different data sources. GenexAI's ability to process data in any language proved to be a game-changer for the company. This was particularly crucial given the company's extensive hours of recorded sessions with doctors from various European countries, each speaking different languages.

Case Study

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Case example: large medical device company

How do **sepsis**, bloodstream infection, hospital-acquired infection, and antimicrobial resistance impact length-of-stay, **mortality**, costs, and infection rates?

The company needed to obtain insights in a very short period of time and could not afford to wait for a manual review

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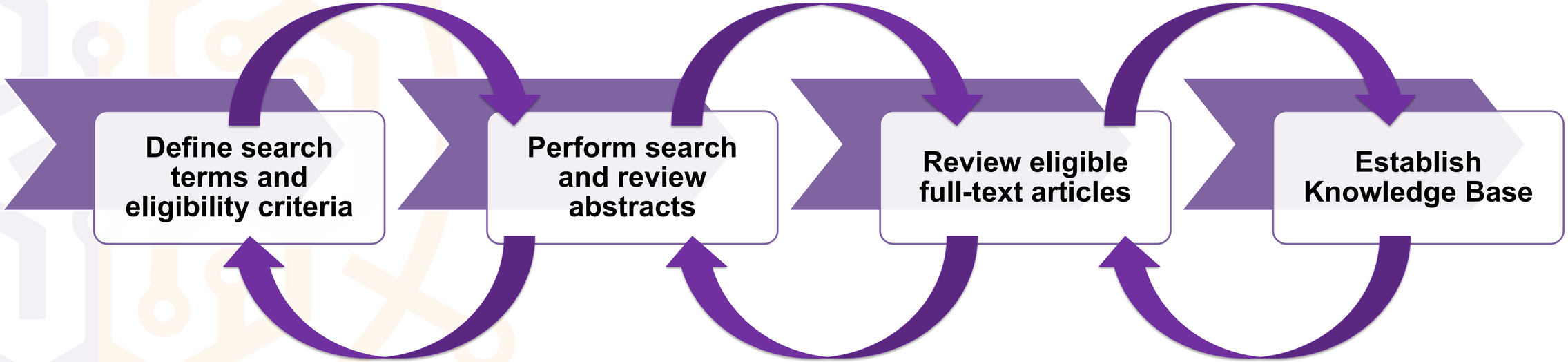
The GenexAI Systematic Literature Review is a dynamic process of continuous feedback



AI allows rapid interaction for adjustment and improved results

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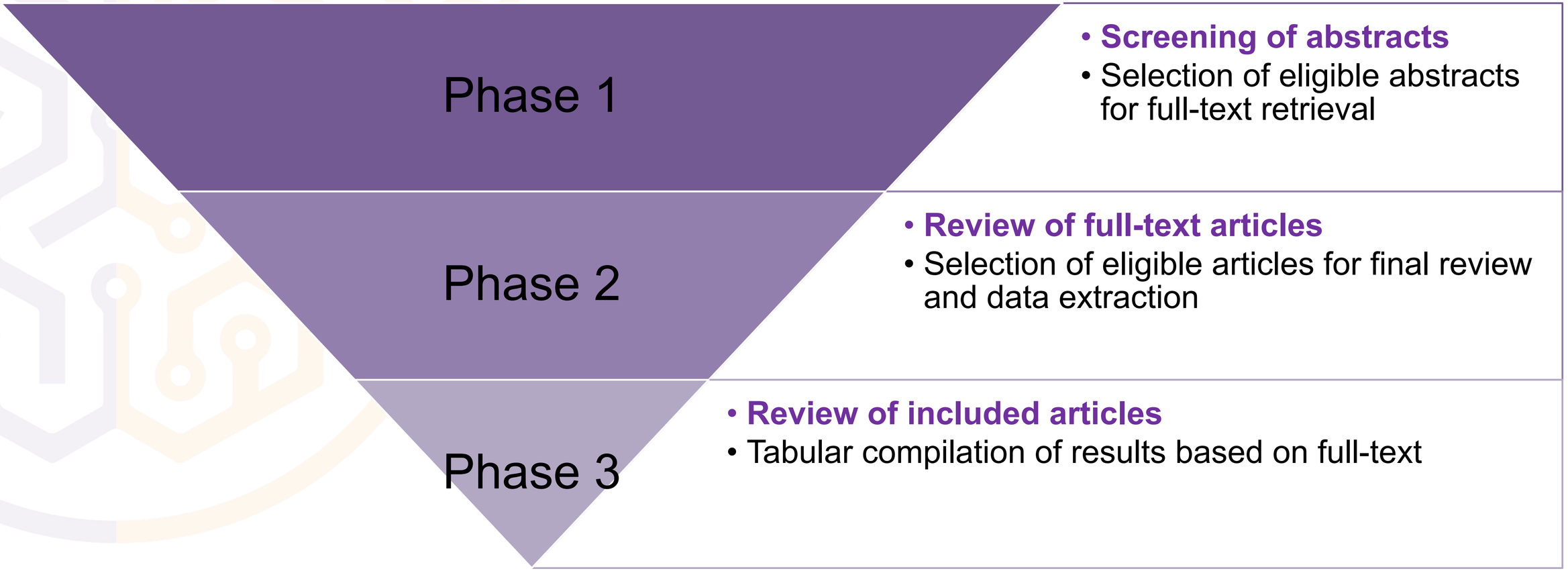
Our team follows a 3-Phase process to select the most relevant sources to address our question



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We applied a single search term over PubMed, looking for publications since 4/December/2023

(((hospital-acquired infections OR healthcare-associated infections OR nosocomial infections) OR (sepsis OR septicemia OR bloodstream infection) OR (antimicrobial resistance OR multidrug resistant)) AND ((length of stay OR (hospital AND (duration OR day))) OR (mortality OR death) OR (cost OR expenditure))) AND (("2023/12/04"[Date - Publication] : "3000"[Date - Publication]))

GenexAI extracted and reviewed 138 abstracts in under 23 minutes

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26 abstracts passed the proposed eligibility criteria, of which seven were randomly selected

Association between severity of sepsis and thyroid function profile

Vindy Nugraha Siampa[1], Satriawan Abadi[1], Andi Makbul Aman[1], Syakib Bakri[1], Risna Halim[1], Andi Alfian Zainuddin[2]

[1]Department of Internal Medicine, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia; [2]Department of Public Health and Community Medicine, Faculty of Medicine, Hasanuddin University, Makassar, Indonesia

Short course of intravenous antibiotics in the treatment of uncomplicated proven neonatal bacterial sepsis: A systematic review

Alanoud Aljarbou[1,2] | Carlos Cuello[1,3] | Ana Teresa Figueiredo Stochero Leslie[1]

Applying artificial neural network in predicting sepsis mortality in the emergency department based on clinical features and complete blood count parameters

Beata Pui Kwan Wong[1,3], Rex Pui Kin Lam[1,3✉], Carrie Yuen Ting Ip[1], Ho Ching Chan[1], Lingyun Zhao[1], Michael Chun Kai Lau[1], Tat Chi Tsang[2], Matthew Sik Hon Tsui[2] & Timothy Hudson Rainer[1]

Effect of Norepinephrine on Peripheral Perfusion Index and Its Association With the Prognosis of Patients With Sepsis

Cui Wang, MD[1], Xiaoting Wang, MD[2], Hongmin Zhang, MD[2], Dawei Liu, MD[2] and Chengyuan Zhang, MD[3]

Research Article

Machine learning-derived blood culture classification with both predictive and prognostic values in the intensive care unit: A retrospective cohort study

Jin Zhang[a,b,1], Wanjun Liu[a,b,1], Wenyan Xiao[a,b,1], Yu Liu[c], Tianfeng Hua[a,b], Min Yang[a,b,*]

[a] *The Second Department of Critical Care Medicine, the Second Affiliated Hospital of Anhui Medical University, Hefei 230601, Anhui, China*
[b] *Laboratory of Cardiopulmonary Resuscitation and Critical Illness, the Second Affiliated Hospital of Anhui Medical University, Hefei 230601, Anhui, China*
[c] *Key Laboratory of Intelligent Computing and Signal Processing, Ministry of Education, Anhui University, Hefei 230601, Anhui, China*

Prolonged vs intermittent intravenous infusion of β-lactam antibiotics for patients with sepsis: a systematic review of randomized clinical trials with meta-analysis and trial sequential analysis

Xiaoming Li[1†], Yi Long[1†], Guixin Wu[1], Rui Li[1], Mingming Zhou[1], Aiting He[1] and Zhengying Jiang[1*]

Association of autoimmune diseases with the occurrence and 28-day mortality of sepsis: an observational and Mendelian randomization study

Hui Li[1†], Xiaojun Pan[1†], Sheng Zhang[1†], Xuan Shen[1†], Wan Li[2], Weifeng Shang[1], Zhenliang Wen[1], Sisi Huang[1], Limin Chen[1], Xu Zhang[3,4,5*], Dechang Chen[1*] and Jiao Liu[1*]

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GenexAI extracted detailed information from all seven full-text articles in under 10 minutes

Columns can include any number of questions

Outcome_Rate	Conclusion	Strengths	Limitations
Main results: - All-cause mortality: One death reported in the standard duration regimen arm (243 patients, very low certainty). Odds ratio for all-cause mortality with short-duration antibiotics was 0.32 (95% CI 0.01-8.24). - Treatment failure: No statistically significant effect for treatment failure with short-duration compared to standard-duration antibiotics (RR 1.47 [95% CI 0.48-4.50], 440 patients, five studies, very low certainty). - Duration of hospitalisation: Short-duration antibiotic regimen shortened the duration of hospitalisation by 4 days (mean difference -4.04 days [95% CI -5.47 to -2.61]; 4 studies; 371 patients; very low certainty). Key conclusions: - The evidence is very uncertain regarding the effectiveness of short-duration antibiotics compared to the standard duration in treating uncomplicated proven bacterial neonatal sepsis. - Short-duration antibiotics may reduce the number of days of hospitalisation, but the evidence is very uncertain due to significant methodological limitations, imprecise estimates, and heterogeneity. - There is an urgent need for well-designed randomized trials with adequate methodological quality to inform the optimal duration of antibiotic treatment for neonatal sepsis.	- The evidence is uncertain regarding the effectiveness of short-duration antibiotics compared to the standard duration in treating uncomplicated proven bacterial neonatal sepsis. Treatment should be based on individual assessment, and there is a need for well-designed randomized trials to inform optimal treatment duration.	The strengths of the study mentioned in the Discussion section are: 1. Comprehensive search strategy: The systematic review was performed based on a comprehensive search across multiple databases, ensuring a thorough literature exploration. 2. Strict methodology: The review followed a strict methodology, adhering to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) reporting guidelines. 3. GRADE approach: The Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach was used to assess the certainty of the evidence, providing a structured and transparent method for rating the quality of evidence. 4. Registration of the review protocol: The protocol for the systematic review was registered, which can facilitate transparency and future investigations. 5. Consistent inclusion criteria and population: The included studies had consistent inclusion criteria and evaluated a similar population, which can help in comparing and synthesizing the results. 6. Consideration of important outcomes: The review intended to assess not only the primary outcomes of mortality and treatment failure but also secondary outcomes like the number of days on central lines and necrotizing enterocolitis, although data for these outcomes were not available in the included studies.	The main limitations of the study include: 1. Small number of studies, leading to a small number of events for all outcomes, especially mortality and treatment failure, resulting in imprecision. 2. Very serious imprecision due to wide confidence intervals that included thresholds of minimal benefit to significant harm for mortality and treatment failure outcomes. 3. Very serious risk of bias across almost all studies. 4. Serious indirectness due to all studies being performed in India, which may limit the applicability of the findings to other countries. 5. No data to assess the subgroup effects as planned. 6. No data on the number of days on central lines and necrotising enterocolitis, which were intended outcomes to assess. 7. Small sample size, which prevented the performance of subgroup and sensitivity analyses.
Main results: - Genetically predicted rheumatoid arthritis (RA) was causally associated with the occurrence of sepsis (OR = 1.138, 95% CI = 1.044-1.240, p = 3.36E-03). - Genetically predicted type 1 diabetes (T1DM) and celiac disease showed potential causal relationships with sepsis in univariable MR analysis, but only RA remained significant in multivariable MR analysis. - No causal link was found between autoimmune disorders and 28-day mortality from sepsis. - Sepsis was suggested to potentially trigger the onset of psoriasis (OR = 1.084, 95% CI = 1.040-1.131, p = 1.488E-04). - In the observational study, rheumatoid arthritis (OR = 1.34, 95% CI = 1.11-1.64, p = 0.003) and multiple sclerosis (OR = 1.31, 95% CI = 1.03-1.68, p = 0.02) were associated with a higher risk of sepsis. - Autoimmune diseases were not associated with 28-day mortality from sepsis in the observational study. Key conclusions: - Both in observational and MR analysis, only rheumatoid arthritis is highly correlated with the occurrence of sepsis	Both in observational and Mendelian randomization (MR) analysis, only rheumatoid arthritis is highly correlated with the occurrence of sepsis. However, autoimmune disease was not associated with an increased 28-day mortality in patients with sepsis. Sepsis may increase the risk of developing psoriasis.	- Comprehensive investigation: The study conducted both Mendelian randomization (MR) and real-world observational analyses to investigate the relationship between autoimmune diseases and sepsis, as well as their 28-day mortality. - Use of two-sample MR analysis: This approach allowed the researchers to infer causal relationships between autoimmune diseases and sepsis at the genetic level, minimizing confounding factors and reverse causation. - Multivariable MR analysis: The study conducted multivariable analysis to account for the potential overlap of genetic bases between different autoimmune diseases and sepsis. - Mediation analysis: The study explored potential mediating factors such as blood cell counts, plasma inflammatory cytokines, and immunoglobulin levels to understand the causal pathways between autoimmune diseases and sepsis. - Real-world data validation: The study used the MIMIC-IV database to validate the findings from the MR analysis and to further explore the relationship between autoimmune diseases and sepsis occurrence and mortality. - Adjustment for confounders: In the observational analysis, the study adjusted for various potential confounding factors such as age, SOFA score, Charlson score, etc., to robustly explore the relationship between	- The study primarily predicted high mortality risk without correcting for concurrent confounding factors such as SOFA score, age, underlying diseases, and had a relatively small sample size. - The immune dysregulation caused by autoimmune diseases, leading to imbalanced cytokines in the sepsis inflammatory cascade, makes it difficult to form a cascading reaction, which is associated with early mortality in sepsis. - The quality of care provided by hospitals is a key factor influencing patient mortality risk, with more experienced hospitals often having lower mortality rates. This factor was not controlled for in the study. - It is uncertain whether the immune dysfunction triggered by severe infections could lead to the development of autoimmune diseases. - The study did not explore the impact of the use of biologics and other immunosuppressive/immunomodulatory medications on the risk of sepsis and mortality in patients with autoimmune diseases. - The study did not account for the management of complications and the enhancement of diagnostic and treatment capabilities specific to autoimmune diseases in reducing the risk of mortality. - The study's findings may not be generalizable beyond the populations studied, which were predominantly of European ancestry. - The study did not consider the potential impact of environmental factors on the relationship between autoimmune diseases and sepsis.

A manual extraction would take at least 30-45 minutes for each article, depending on the level of data

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Finally, our Knowledge Base connected all sources to allow for further, deeper research

GenexAI is capable of performing ultra-fast searches across all the data available in the Knowledge Base

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Asking your Knowledge Base

“Describe the impact of sepsis on mortality rates.”

- Global sepsis incidence and mortality: According to Rudd et al. (2020), sepsis remains a major global health issue with significant mortality rates. The study reported that in 2017, an estimated 48.9 million cases of sepsis occurred worldwide, resulting in approximately 11 million sepsis-related deaths, which accounted for almost 20% of all global deaths [1].
- Mortality rates in different regions: Bauer et al. (2020) conducted a systematic review and meta-analysis that showed mortality rates in sepsis and septic shock varied across Europe, North America, and Australia, with a pooled mortality rate of 25.7% between 2009 and 2019 [2].
- Mortality associated with septic shock: Dellinger et al. (2023) highlighted that septic shock, a severe form of sepsis, is associated with higher mortality rates. The Surviving Sepsis Campaign guidelines emphasize the critical nature of septic shock and the need for rapid intervention [3].
- Impact of hemoglobin levels on mortality: Studies by Qi et al. (2021) and Jung et al. (2019) found that low hemoglobin levels are associated with increased mortality in sepsis patients. Specifically, Jung et al. reported that patients with septic shock and hemoglobin levels below 10 g/dL had a higher mortality rate [5, 6].
- Hematocrit and mortality: Luo et al. (2022) demonstrated an association between hematocrit levels and 30-day mortality in sepsis patients, suggesting that hematocrit could be a prognostic factor [7].
- Red blood cell distribution width (RDW): Zhang et al. (2020) conducted a systematic review and meta-analysis indicating that high RDW is a prognostic marker of poor outcome in sepsis patients [8].
- Neutrophil-to-lymphocyte ratio (NLR): Huang et al. (2020) found that an elevated NLR is associated with increased mortality in sepsis, highlighting the role of systemic inflammation in sepsis outcomes [10].

References: [1] Rudd, K. E., et al. (2020). Lancet 395, 200-211. [2] Bauer, M., et al. (2020). Crit Care 24(1):239. [3] Dellinger, R. P., et al. (2023). Crit Care Med 51(4):431-444. [4] Levy, M. M., et al. (2018). Crit Care Med 46(6):997-1000. [5] Qi, D., & Peng, M. (2021). Shock 55, 215-223. [6] Jung, S. M., et al. (2019). Acute Crit. Care 34, 141-147. [7] Luo, M., et al. (2022). PLoS One 17, 3. [8] Zhang, L., et al. (2020). BMC Immunol. 21, 40. [9] Abdul-Aziz, M. H., et al. (2020). Curr Opin Infect Dis 33(6):501-510. [10] Huang, Z., et al. (2020). Am. J. Emerg. Med. 38, 641-647. [11] Abdul-Aziz, M. H., et al. (2012). Ann Intensive Care 2(1):37. [12] Kondo, Y., et al. (2020). J Intensive Care 8:77.

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Conclusion

Streamlined evidence processing

AI-powered assessment can expedite evidence review and synthesis.

Improved accuracy and consistency

Machine learning algorithms and embedding can detect patterns and anomalies with high precision.

Scalable and cost-effective

AI solutions can handle large volumes of data at a fraction of human labor costs.

Collaborative human-AI workflows

Integrated systems foster effective collaboration between human experts and AI models.

By embracing AI-powered evidence assessment, organizations can unlock new levels of speed, accuracy, and scalability in their decision-making processes.

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Schedule a session

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AI Evolution: Game-Changing Triumphs and Healthcare Revolution

IBM Watson defeating Jeopardy champions in 2011

IBM's Watson supercomputer defeating Jeopardy champions Ken Jennings and Brad Rutter, showcasing AI's natural language understanding and knowledge retrieval capabilities.

DeepMind's AlphaGo defeating Lee Sedol in 2016

DeepMind's AlphaGo defeating world champion Lee Sedol in the ancient game of Go, demonstrating AI's advanced problem-solving and strategic thinking abilities.

First FDA-approved AI diagnostic device in 2018

The FDA approving IDx-DR, the first AI-based diagnostic device for detecting diabetic retinopathy, paving the way for AI-enabled clinical decision support systems.

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What is Responsible AI?

- **Ethical Development**

Ensuring AI systems are developed with ethical principles and values in mind, mitigating potential biases and risks.

- **Transparency and Explainability**

Making AI systems transparent, interpretable, and explainable to stakeholders, promoting trust and accountability.

- **Human Oversight and Control**

Maintaining human oversight and control over AI systems, ensuring alignment with human values and priorities.

- **Privacy and Data Protection**

Protecting individual privacy and data rights, ensuring responsible data practices and governance.

- **Societal Impact Assessment**

Assessing and addressing potential societal impacts of AI systems, both positive and negative.

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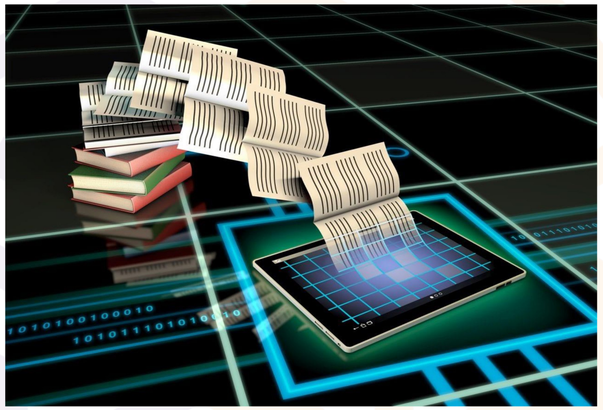
How AI can help you



Rapid Extraction

Convenience for your Systematic Literature Review

Expedite the extraction of pertinent data from vast amounts of literature, audio and video, freeing up valuable resources for other critical tasks

Standard Reports

Speed up clinical and regulatory evaluation reports

With GenexAI, teams can confidently entrust report creation to our system, significantly reducing the time spent on this task and allowing for a final review that ensures accuracy and compliance with regulatory standards

Custom Research

Tailored solutions for specific challenges

Excels in providing tailored answers to specific questions based on evidence. Unlike off-the-shelf solutions, GenexAI combines the power of AI with human expertise to tackle the most challenging research tasks

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The Company

Company Overview

A leading medical technology company sought to execute a pilot study to determine potential future business opportunities

Challenge

Lack of company resources.

Manual review of vast amounts of clinical data is time-consuming, error-prone, and hindered timely decision-making

AI Solution

GenexAI evidence assessment platform was deployed to extract, synthesize, and prioritize key insights from structured and unstructured data sources

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Proposed eligibility criteria

Criteria	Inclusion criterion	Exclusion criterion
Disease	hospital-acquired infections OR healthcare-associated infections OR nosocomial infections OR sepsis OR septicemia OR bloodstream infection OR antimicrobial resistance OR multidrug resistant	Community acquired infection
Population	Humans hospitalized	-Laboratory and drug discovery (in vitro or in silico) studies -Animal studies
Outcomes	length of stay OR hospital duration/day mortality OR death cost OR expenditure infection rate OR incidence OR frequency OR prevalence	-
Study methodology	-Clinical trials (including phase II and III) -Pragmatic trials -Observational studies -Economic evaluations -Systematic reviews and meta-analysis	Conference abstracts with little useful data Narrative reviews, opinion-pieces, editorials, letters and other publications that are not primary research reports
Publication date	Since December 4, 2023	-
Language	Any language	-

For the initial pilot phase, due to the vast number of hits, GenexAI searched publications since December 4, 2023 and focused on sepsis and mortality for demonstration purposes only

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For each Phase, our team defined specific questions

Phase 3: Review of selected full-text articles

Type	Question	Description
General	Authors	Extract an ordered list of the authors. This is usually mentioned on top of the first page.
General	Title	What is the title of this study
General	Journal	Where was this study published?
General	DOI	Extract the Document Object Identifier value only.
General	Publication Date	Inform only the year of the study publication.
Specific	Objective	What is the objective or goal of this study?
Specific	Patient population	Inform how many patients were included in the study and describe this patient population. Inform inclusion and exclusion criterias.
Specific	Design	Specify which type of study it is, including (but not exclusively): randomized clinical trial, or clinical trial, or phase I, or phase II, or phase III, or phase IV, or Pragmatic trial, or observational study, or cohort, or prospective, or retrospective, or case-control, or real-world study, or artificial intelligence, machine learning, or systematic literature review, or systematic review, or Meta-analysis, or Validation study, or diagnostic accuracy, or sensitivity, or specificity, or predictive value, or likelihood ratio and extract the original text where it is mentioned.
Specific	DataSource	Specify data source, data collection, clinical data, or sample collection, including (but not exclusively): hospital, clinics, administrative database, chart review, medical records, laboratorial record, literature review such as EMBASE, PubMed, and Cochrane Library (in case of systematic review or meta analysis)
Specific	Outcome_Death	List the main results and key conclusions of the study regarding death, mortality, lethality or survival and include any quantified results. Specify first how many deaths and survivors(N and %), by period if available. If study does not mention it, answer NOT DESCRIBED. Do not describe any other outcomes(such as LOS, cost) except death, mortality, lethality or survival.
Specific	Outcome_LOS	List the main results and key conclusions of the study in terms of length of stay, duration of hospitalization, or intensive care unit and include any quantified results. If the study does not mention it, answer NOT DESCRIBED. Do not describe any other outcomes (such as death, cost) except length of stay, duration of hospitalization, or intensive care unit.
Specific	Outcome_Cost	List the main results and key conclusions of the study in terms of healthcare resource utilization and/or cost or expenditure, and include any quantified results. If the study does not mention it, answer NOT DESCRIBED. Do not describe any other outcomes (such as LOS, death) except healthcare resource utilization and/or cost or expenditure.
Specific	Outcome_Rate	List the main results and key conclusions of the study in terms of incidence rate, prevalence, frequency or incidence of sepsis, and include any quantified results. If study does not mention it, answer NOT DESCRIBED. Do not describe any other outcomes (such as death, LOS, cost) exceptincidence rate, prevalence, frequency or incidence of sepsis.
Specific	Conclusion	Summarise conclusion of the study (regardless of outcome)
Specific	Strengths	If author mentions STUDY STRENGTHS, mention which ones. Otherwise, answer NOT MENTIONED.
Specific	Limitations	If author mentions STUDY LIMITATIONS, mention which ones. Otherwise, answer NOT MENTIONED.

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Asking your Knowledge Base

“Inform what measures can be taken to reduce mortality.”

- Early and appropriate antibiotic therapy: The Surviving Sepsis Campaign guidelines recommend immediate initiation of broad-spectrum antibiotics to reduce mortality [3, 4].
- Prolonged infusion of beta-lactam antibiotics: Some studies suggest that prolonged infusion of beta-lactam antibiotics may be more effective than intermittent infusion in critically ill sepsis patients, potentially leading to better outcomes [9, 11, 12].
- Hemodynamic support and source control: Rapid fluid resuscitation and control of the infectious source are essential components of sepsis management to reduce mortality [3, 4].
- Use of predictive scores: Tools like the Sequential Organ Failure Assessment (SOFA) score and the quick SOFA (qSOFA) score can help in early identification of sepsis and guide management to improve survival [4].
- Personalized treatment strategies: Individualized treatment plans based on patient-specific factors, such as underlying health conditions and severity of sepsis, can improve outcomes [3, 4].
- Continuous monitoring and reassessment: Ongoing assessment of sepsis patients' response to treatment is crucial for timely adjustments in therapy to reduce mortality [3, 4].

References: [1] Rudd, K. E., et al. (2020). Lancet 395, 200-211. [2] Bauer, M., et al. (2020). Crit Care 24(1):239. [3] Dellinger, R. P., et al. (2023). Crit Care Med 51(4):431-444. [4] Levy, M. M., et al. (2018). Crit Care Med 46(6):997-1000. [5] Qi, D., & Peng, M. (2021). Shock 55, 215-223. [6] Jung, S. M., et al. (2019). Acute Crit. Care 34, 141-147. [7] Luo, M., et al. (2022). PLoS One 17, 3. [8] Zhang, L., et al. (2020). BMC Immunol. 21, 40. [9] Abdul-Aziz, M. H., et al. (2020). Curr Opin Infect Dis 33(6):501-510. [10] Huang, Z., et al. (2020). Am. J. Emerg. Med. 38, 641-647. [11] Abdul-Aziz, M. H., et al. (2012). Ann Intensive Care 2(1):37. [12] Kondo, Y., et al. (2020). J Intensive Care 8:77.

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