The Open Urology & Nephrology Journal
DOI: 10.2174/011874303X487109261022042811, 2026, 19, e1874303X487109
ISSN: 1874-303X

META-ANALYSIS **OPEN ACCESS**

Preoperative Albumin-to-Fibrinogen Ratio as a Prognostic Biomarker in Bladder Cancer: A Systematic Review and Meta-Analysis

Naomi Constantia Allen[1,*], Nicholas Andrian Singgih[1] and Tjahjodjati[1]

[1]*Department of Urology, Padjadjaran University, Dr. Hasan Sadikin General Hospital, Bandung, Indonesia*

© 2026 The Author(s). Published by Bentham Open.
This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International Public License (CC-BY 4.0), a copy of which is available at: https://creativecommons.org/licenses/by/4.0/legalcode. This license permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

*Address correspondence to this author at the Department of Urology, Padjadjaran University, Dr. Hasan Sadikin General Hospital, Bandung, Indonesia; E-mail: naomiconstantia@gmail.com

Cite as: Allen N, Singgih N, Tjahjodjati . Preoperative Albumin-to-Fibrinogen Ratio as a Prognostic Biomarker in Bladder Cancer: A Systematic Review and Meta-Analysis. Open Urol Nephrol J, 2026; 19: e1874303X487109.
http://dx.doi.org/10.2174/011874303X487109261022042811

Published: October 29, 2026

Send Orders for Reprints to
reprints@benthamscience.net

Table S1. Search strategies and number of records retrieved from each database.

Database	Search Strategy	Results
PubMed	(((((bladder cancer[MeSH Terms]) OR (bladder neoplasm[MeSH Terms])) OR (bladder carcinoma[MeSH Terms])) OR (bladder tumor[MeSH Terms])) AND ((((((albumin to fibrinogen ratio) OR (albumin-fibrinogen ratio)) OR (fibrinogen to albumin ratio)) OR (fibrinogen-albumin ratio)) OR (AFR)) OR (FAR))) AND ((survival) OR (prognosis))	319
Cochrane Library	"bladder cancer" OR "bladder tumor" OR "bladder carcinoma" in Title Abstract Keyword AND "albumin to fibrinogen ratio" OR "albumin-fibrinogen ratio" OR "fibrinogen to albumin ratio" OR "FAR" OR "AFR" in Title Abstract Keyword AND "Survival" OR "Prognosis"	24
EBSCOhost	("bladder cancer" OR "bladder carcinoma" OR "bladder tumor" OR "bladder neoplasm") AND ("albumin to fibrinogen ratio" OR "albumin-fibrinogen ratio" OR "fibrinogen to albumin ratio" OR "fibrinogen-albumin ratio" OR AFR OR FAR) AND (prognosis OR survival OR outcome OR mortality)	84

PRISMA 2020 Checklist.

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1, the title
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Page 1,
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Page 2, para 3
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 2, para 4.
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Page 3, para 4
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 3, para 2
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Page 3, para 2

Section and Topic	Item #	Checklist item	Location where item is reported
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Page 3, para 3
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Page 4, para 1
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Page 5, figure 1
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Page 5, figure 1
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 4, para 2
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	Page 4, para 3
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	Page 4, para 4
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Page 4, para 4
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Page 4, para 4
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Page 4, para 4
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	Page 4, para 4
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Page 4, para 3
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 4, para 2
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 4, para 4
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Page 4, para 5
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Page 4, para 5
Study characteristics	17	Cite each included study and present its characteristics.	Page 5, para 2
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Page 6, para 3
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	Page 6, para 2
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	Page 10, para 1
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Page 10, para 1
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Page 10, para 2
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Page 10, para 2
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 6, para 3
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Page 8
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Page 13, para 1
	23b	Discuss any limitations of the evidence included in the review.	Page 14, para 2
	23c	Discuss any limitations of the review processes used.	Page 14, para 2
	23d	Discuss implications of the results for practice, policy, and future research.	Page 14, para 2
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 3 para 1
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 3 para 1
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	Page 3 para 1

Section and Topic	Item #	Checklist item	Location where item is reported
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 3 para 2
Competing interests	26	Declare any competing interests of review authors.	Page 3 para 3
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Page 7

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71
For more information, visit: http://www.prisma-statement.org/

DISCLAIMER: Please note that this article is currently in the 'Early view' stage and is not the final 'Version of Record'. While it has been accepted, copy-edited, and formatted, however, it is still undergoing proofreading and corrections by the authors. Therefore, the text may still change before the final publication. Although 'Early view' may not have all bibliographic details available, the DOI and the year of online publication can still be used to cite them. The article title, DOI, publication year, and author(s) should all be included in the citation format. Once the 'Final Version of Record' becomes available the 'Early view' will be replaced by that.