INPLASY

INPLASY2025120085

doi: 10.37766/inplasy2025.12.0085

Received: 24 December 2025

Published: 24 December 2025

Prognostic value of fibrinogen-to-albumin ratio (FAR) in patients with urothelial carcinoma of the bladder: a meta-analysis based on multivariable-adjusted estimates

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ADMINISTRATIVE INFORMATION

Support - No financial support.

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

Conflicts of interest - None declared.

INPLASY registration number: INPLASY2025120085

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 24 December 2025 and was last updated on 27 October 2025.

INTRODUCTION

Study aim To assess Fibrinogen-to-Albumin ratio(FAR) as an independent predictor for clinicopathological traits and prognosis in urothelial carcinoma of bladder underwent radical cystectomy.

Background Urothelial carcinoma is defined as the malignancy derived from the mucosal surface of urinary system. Urothelial carcinoma of bladder (UCB) was the most common malignancy in urothelial carcinoma. UCB, always means a large toll on human health and huge economic burden for patients, especially for who underwent radical cystectomy, due to its high recurrence and malignancy. In spite of advanced surgical techniques, emerging new treatments in recent years, the improvement of long-term survival have barely changed and the treatment decision-making for urothelial carcinoma is still oftentimes challenging. In order to create precise preoperative risk assessments and forecast the prognosis of UCB following radical cystectomy, it is crucial to find and confirm possible biomarkers. Emerging research in recent years has suggested that the preoperative FAR may be a predictor for patients with UCB. In order to evaluate the possible effects of preoperative FAR in UCB patients who underwent radical cystectomy, we conducted this pooled analysis. Additionally, relationships between preoperative FAR and the clinicopathological traits was also evaluated for UCB patients.

Rationale Urothelial carcinoma is defined as the malignancy derived from the mucosal surface of urinary system. Urothelial carcinoma of bladder (UCB) was the most common malignancy in urothelial carcinoma. UCB, always means a large toll on human health and huge economic burden for patients, especially for who underwent radical cystectomy, due to its high recurrence and malignancy. In spite of advanced surgical techniques, emerging new treatments in recent years, the improvement of long-term survival have

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barely changed and the treatment decision-making for urothelial carcinoma is still oftentimes challenging. In order to create precise preoperative risk assessments and forecast the prognosis of UCB following radical cystectomy, it is crucial to find and confirm possible biomarkers. Emerging research in recent years has suggested that the preoperative FAR may be a predictor for patients with UCB. In order to evaluate the possible effects of preoperative FAR in UCB patients who underwent radical cystectomy, we conducted this pooled analysis. Additionally, relationships between preoperative FAR and the clinicopathological traits was also evaluated for UCB patients.

METHODS

Search strategy The main databases to be searched are MEDLINE ,Embase and PubMed. Other important or specialist databases that will also be searched.

Eligibility criteria Patients pathologically diagnosed as urothelial carcinoma of bladder(UCB), who underwent radical cystectomy , and incorporating multivariate data for evaluating the relationship between FAR and survival outcomes in UCB.

Data extraction To guarantee data reasonable and enable thorough synthesis, the following details were methodically taken out of each included study with a predefined form. The following characteristics were extracted from included studies: first author, publication year, region, Case number, Therapy, Cut-off value, Follow up, Survival outcome and Newcastle-Ottawa Scale (NOS) score. The majority of HR and 95%CI parameters will be obtained straightly from the included studies. The clinicopathological raw data were retrieved for pooled analysis to evaluate the relationship between FAR and clinicopathological traits. The quality of the included studies was assessed using the NOS system, which incorporated the evaluation of subject selection, comparability of groups, and clinical outcome. The maximum score is 9 stars, and the quality of study was classified in the following: 0–3 stars denoted low quality, 4–6 stars moderate quality, and 7–9 stars high quality. The studies with low quality were excluded for this pool analyses. Two investigators independently examined every step of the data management and quality evaluation; any discrepancy was resolved by discussion with the corresponding author.

Outcome definitions Clinicopathological Traits(Vascular invasion, Nodal Status, TNM stage, Grade), Overall Survival (OS), Progress-free survival (PFS), Cancer-specific survival (CSS).

Strategy of data synthesis / Statistical analysis The HRs and 95%CIs will be collected and pooled according to the data sourse of multivariate analysis. The ORs and 95%CIs will be calculated from the included studies, with regard to the link between FAR and chinicopathological features. Heterogeneity between the research will be reported using statistical effects (chi-square test, p-value, and I2 statistic). The pooled analysis prefers to adopt a fixed-effect model unless there is significant heterogeneity between the studies. Sensitivity analysis will be conducted to validate the results. Begg's and Egger's tests may be performed to evaluate the publication bias. Furthermore, "trim and fill" method may be applied to find the potential missing studies, and calculate the adjusted pooled effects. P value<0.05 will be deemed statistically significant. Statistical analyses will be conducted through the software Stata version 18.0(Stata Corporation, Texas, USA).

Country(ies) involved China.

Keywords Urothelial Carcinoma of Bladder, Radical Cystectomy, Clinicopathological Traits, Fibrinogen to Albumin Ratio(FAR), Survival Outcomes.

Dissemination plans Target audiences include clinicians via academic journals, policymakers and patients.

Contributions of each author

Author 1 - Jia Peng - performed the literature search and data collection, and performed the statistical analysis.
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