

# INPLASY PROTOCOL

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**Conflicts of interest:**  
None declared.

## Trimodal Therapy versus Radical Cystectomy for the treatment of Muscle-Invasive Bladder Cancer: A System Review and Meta-Analysis

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**Review question / Objective:** Whether bladder preservation modalities offer oncologic equivalence compared to radical cystectomy for the treatment of Muscle-Invasive Bladder Cancer.

**Condition being studied:** Radical cystectomy (RC) is widely recognized as the gold standard treatment for muscle-invasive bladder cancer (MIBC). Nevertheless, removal of the bladder may lead to significant morbidity and affect patients' comfort and quality of life. Thus, trimodal therapy (TMT), as a bladder-preservation options recommended in guidelines, has emerged as a viable alternative and has been selectively employed in recent years. TMT undoubtedly provided superior quality of life, however, it remains unclear whether bladder preservation modalities offer oncologic equivalence compared to RC.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 01 May 2023 and was last updated on 01 May 2023 (registration number INPLASY202350004).

### INTRODUCTION

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guidelines, has emerged as a viable alternative and has been selectively employed in recent years. TMT undoubtedly provided superior quality of life, however, it remains unclear whether bladder preservation modalities offer oncologic equivalence compared to RC.

## METHODS

**Search strategy:** We searched MEDLINE, EMBASE, and the Cochrane Library up to March 2023 that met our criteria for inclusion. The search terms were (“trimodal therapy” OR “radiotherapy” OR “chemoradiotherapy” OR “chemoradiation” OR “bladder-sparing”) AND (“radical cystectomy”) AND (“bladder cancer” OR “bladder carcinoma”).

**Participant or population:** Muscle-Invasive Bladder Cancer.

**Intervention:** Trimodal Therapy.

**Comparator:** Radical Cystectomy.

**Study designs to be included:** Randomized controlled trials, prospective or retrospective cohort study.

**Eligibility criteria:** The following requirements were satisfied by the chosen studies: (1) randomized controlled trials, prospective or retrospective cohort study; (2) compared TMT with RC in patients diagnosed with MIBC; (3) reported overall survival (OS) or cancer-specific survival (CSS); (4) survival outcomes were analyzed using multivariable analysis or after propensity score matching. (5) letter to the editor, reviews, case-series and case-reports were not considered; and (6) in the event when studies focused on the real-world database, the study providing more relevant information was included.

**Information sources:** MEDLINE, EMBASE, and the Cochrane Library.

**Main outcome(s):** Overall survival (OS), and cancer-specific survival (CSS).

## Quality assessment / Risk of bias analysis:

The quality of individual included studies was independently assessed based on the Downs and Black tool by two reviewers.

**Strategy of data synthesis:** Chi-square-based Q tests and I<sup>2</sup> statistics were used to determine whether there was significant heterogeneity across studies. In cases where there was high heterogeneity, as indicated by an I<sup>2</sup> value > 50% and P value < 0.05, the pooled effect was determined using a random-effects model (the DerSimonian and Laird method). When this was not possible, we conducted the meta-analysis using a fixed-effects approach (the Mantel-Haenszel technique).

**Subgroup analysis:** No.

**Sensitivity analysis:** No.

**Language restriction:** English.

**Country(ies) involved:** China.

**Keywords:** Trimodal Therapy, Radical Cystectomy, Muscle-Invasive Bladder Cancer.

## Contributions of each author:

Author 1 - Xiaozhe Su.

Author 2 - Caitao Dong.

Author 3 - Wentao Liu.