

# INPLASY PROTOCOL

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None declared.

## Cytoreductive prostatectomy improves survival outcomes in patients with oligometastases: a systematic meta-analysis

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**Review question / Objective:** The purpose of this study was to assess the efficacy of CRP for the treatment of OPC by conducting a systematic meta-analysis.

**Condition being studied:** Growing research finds cytoreductive prostatectomy has survival benefit for patients oligometastases. Whether cytoreductive prostatectomy (CRP) should be performed to treat oligometastatic prostate cancer (OPC) remains controversial. This systematic review and meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 06 June 2022 and was last updated on 06 June 2022 (registration number INPLASY202260017).

### INTRODUCTION

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systematic review and meta-analysis was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analysis statement.

## METHODS

**Search strategy:** Data sources included publications in the PubMed, Embase, the Cochrane Library, EBSCO, Web of Science (SCI) databases as of May 2022. Prospective studies comparing the efficacy of RP versus no RP in the treatment of OPC.

**Participant or population:** Individuals diagnosed with OPC.

**Intervention:** All patients with oligometastases in the intervention group underwent cytoreductive prostatectomy tumor debulking surgery.

**Comparator:** All control patients were treated with ADT, with no suspicious visceral involvement being observed upon pretreatment imaging.

**Study designs to be included:** Prospective cohort study.

**Eligibility criteria:** Two researchers independently assessed the eligibility of the literature according to the inclusion above criteria. All discrepancies were resolved through discussion or by a third researcher as necessary. Studies eligible for inclusion in this analysis met the following criteria: (1) studies of patients with oligometastatic prostate cancer, as defined by the presence of  $\leq 5$  metastases; (2) studies examining the clinical outcomes associated with cytoreductive surgery in oligometastatic prostate cancer patients; and (3) studies reporting relevant outcomes following surgery including OS, CSS, and/or PFS.

**Information sources:** PubMed, Embase, the Cochrane Library, EBSCO, Web of Science (SCI).

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

**Quality assessment / Risk of bias analysis:** The Newcastle-Ottawa scale (NOS) was utilized to examine prospective cohort study quality]. The NOS is considered the most extensive method for evaluating randomized controlled trials. All included studies scored 6 points or higher on this scale, and were thus considered to be of high-quality.

**Strategy of data synthesis:** Post-treatment outcomes of interest including OS, CSS, and PFS were extracted from included studies. The pooled data were expressed in the form of risk odds ratios (ORs) and 95% confidence intervals (CIs). The I<sup>2</sup> statistic was used to assess heterogeneity among studies, with I<sup>2</sup> < 50% being indicative of acceptable heterogeneity. When heterogeneity was acceptable, results were analyzed with a fixed-effects model, whereas a random-effects model was otherwise used. The Z-test was used to analyze pooled effects, with P < 0.05 as the significance threshold. The methodological quality of the RCTs was assessed independently by two researchers using the Cochranes Collaboration's Risk of Bias tool<sup>15</sup>. Estimates were pooled using a generic invariance-weighted random-effects models to consider the between-study heterogeneity. Mean differences (MD) was used for continuous estimates. RevMan5.3 (Review Manager [RevMan], version 5.3, Cochrane Collaboration) software was used for statistical data processing. A funnel plot was used to test for the presence of publication bias, and P value < 0.05 was considered statistically significant.

**Subgroup analysis:** If necessary, we will conduct subgroup analysis on the factors that may lead to the source of heterogeneity, such as the number of cases, age.

**Sensitivity analysis:** Sensitive analysis by fixed model or omitting one study at one generated confirmed result.

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**Language:** English.

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

**Keywords:** Cytoreductive prostatectomy; oligometastases; overall survival; cancer-specific survival; progression-freesurvival.

**Contributions of each author:**

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