

# INPLASY

## Patients with lymph node metastases of prostate cancer and PSMA-based radioligand therapy: a systematic review and meta-analysis

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### ADMINISTRATIVE INFORMATION

**Support** - No external funding.

**Review Stage at time of this submission** - Formal screening of search results against eligibility criteria.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202650043

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 8 May 2026 and was last updated on 8 May 2026.

### INTRODUCTION

**Review question / Objective** To summarize present knowledge of PRLT for patients with LNM of prostate cancer.

**Rationale** Finding of consistent high PSA50 response, progression free survival and overall survival may influence international guidelines for treatment of patients with prostate cancer.

**Condition being studied** Lymph node metastases of prostate cancer.

### METHODS

**Search strategy** PubMed search using the words: ((prostate cancer OR prostate neoplasms OR prostate malignancy OR prostate adenocarcinoma) AND (prostate specific membrane antigen OR PSMA) AND (lymph node metastases OR regional metastases OR oligometastatic prostate cancer) AND (lutetium OR Lu) AND (radioligand therapy OR PRLT) AND (prostate specific antigen response OR

progression free survival OR overall survival) NOT (abstracts OR editorials OR proceedings OR case reports)).

**Participant or population** Patients with PSMA-positive lymph node metastases of prostate cancer.

**Intervention** PSMA-based <sup>177</sup>lutetium radioligand therapy.

**Comparator** Patients with more advanced prostate cancer and other systemic cancer treatments.

**Study designs to be included** Tunnel design for bias. Forest plots for summaries of outcomes. Non-parametric statistics. for comparisons.

**Eligibility criteria** Inclusion; Patients with PSMA positive lymph node metastatic prostate cancer  
Exclusion: Patients without histologically proven prostate cancer. Publications with only widespread metastatic prostate cancer.

**Information sources** PubMed AND Google scholar AND references in reference lists.

**Main outcome(s)** PSA50 response, progression free survival, and overall survival.

**Additional outcome(s)** Severe adverse effects, and discontinuation of treatment.

**Data management** Data entered in Excel and transferred to STATA for statistical analyses. Exchange by emails of data analyses and summaries made in STATA between all investigators.

**Quality assessment / Risk of bias analysis** Funnel plot for outliers.

**Strategy of data synthesis** Retrieval of publications by two investigators. Synthesis of data by Forest plots.

**Subgroup analysis** Randomized controlled trials and real world cohort studies.

**Sensitivity analysis** I2 values in Forest plots.

**Language restriction** No language restrictions. The search only found publications in English.

**Country(ies) involved** Austria, Turkey, Australia, USA, Denmark.

**Other relevant information** Investigator initiated systematic review.

**Keywords** prostate neoplasms; lymph node metastases; radioligand therapy.

**Dissemination plans** Abstract accepted for presentation at PROTISH26 September 2026. A final manuscript of the SR will be submitted for publication in an international oncology journal.

#### **Contributions of each author**

Author 1 - Giulia Santo - retrieved publications, made a PRISMA Flow Scheme, statistical analysis.

Email: giulia.santo@tirol-kliniken.at

Author 2 - Irene Virgolini - overview of the synthesis based on own experience.

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Author 3 - Murat Tuncel - Contributed by inclusion of a relevant RCT to the systematic review.

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Author 4 - John Yaxley - corrected data in the SR.

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Author 5 - Daniel Kapp - intensive line by line corrections of several versions of the manuscript.

Discussion of arguments and background literature.

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Author 6 - Finn von Eyben - Made outlines for the SR, wrote the first draft of the manuscript, made Funnel and Forest plots, and will write a final version of the SR based on input from all investigators and corresponding authors of cited publications.

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