

# INPLASY PROTOCOL

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None declared.

## Comparing Urinary and Sexual Complications of Robot-Assisted Radical Prostatectomy and Laparoscopic Radical Prostatectomy in Prostate Cancer: a Systematic Review and Meta-Analysis Protocol

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**Review question / Objective:** The aims of this study are: 1. To compare urinary complications of robot-assisted radical prostatectomy (RARP) and laparoscopic radical prostatectomy (LRP) in patients with prostate cancer; 2. To compare sexual complications of RARP and LRP in patients with prostate cancer.

**Condition being studied:** Prostate cancer is one of the most prevalent types of cancer; according to 2018 statistics, prostate cancer was responsible for 7.1% of all cancer in men. The primary intervention in such patients is radical prostatectomy surgery (RP), which could be performed in different methods in patients that cancer has not spread beyond the prostate gland or has not spread much. One of the most common types of RP is laparoscopic radical prostatectomy. There are several techniques for performing RP; two are Conventional Laparoscopic Radical Prostatectomy (LRP) and Robot-Assisted Radical Prostatectomy (RARP). Sexual and urinary difficulties can occur in prostate cancer patients due to cancer itself or the treatment. Like any treatment option and surgery, radical prostatectomy can carry risks, like urinary (e.g., incontinency) and sexual complications (e.g., Impotence). In this review, we compared urinary and sexual complications of LRP and RARP.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 18 October 2021 and was last updated on 18 October 2021 (registration number INPLASY2021100068).

### INTRODUCTION

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prostatectomy (RARP) and laparoscopic radical prostatectomy (LRP) in patients with prostate cancer; 2. To compare sexual complications of RARP and LRP in patients with prostate cancer.

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## METHODS

**Search strategy:** We developed different search strings for our databases. The search strategy of our review was: ("prostate cancers" OR "prostate cancer" OR "prostate neoplasm" OR "prostate neoplasms" OR "prostatic cancers" OR "prostatic cancer" OR "prostatic neoplasm" OR "prostatic neoplasms" OR "cancer of prostate" OR "cancer of the prostate" OR "neoplasm of the prostate" OR "prostatic carcinoma" OR "prostate carcinoma" OR "carcinoma of prostate" OR "carcinoma of the prostate" OR "cancerous prostate") AND ("da vinci" OR davinci OR robot\* OR device\* OR "computer-assisted surger\*" OR "computer assisted surger\*" OR "computer-aided surger\*" OR "computer aided surger\*" OR "image-guided surger\*" OR "image guided surger\*" OR "surgical navigation\*" OR "robotic surgical" OR "robot surger\*" OR "robot-assisted surger\*" OR "robot assisted surger\*" OR "robot-enhanced" OR "robot enhanced" OR "robotic-assisted" OR "robotic assisted" OR "laparoscopic prostatectomy robot open" OR LAPPRO OR "robot-assisted radical prostatectomy"

OR RARP OR "robot assisted radical prostatectomy" OR RARP OR "robotic-assisted laparoscopic radical prostatectomy" OR "robotic assisted laparoscopic prostatectomy" OR RALP) AND Laparoscopy OR laparos\* OR "laparoscopic radical prostatectomy") AND ("sexual function" OR "sexual dysfunction" OR "sex function" OR "disorder of sex" OR "disorders of sex" OR "psychosexual disorder" OR "psychosexual disorders" OR "psychosexual function\*" OR "psychosexual dysfunction\*" OR "psychosexual disorder\*" OR "sexual desire\*" OR "hypoactive sexual desire\*" OR "sexual aversion\*" OR "orgasm disorder\*" OR "orgasmic disorder\*" OR "arousal disorder\*" OR "arousal dysfunction\*" OR "arousal function\*" OR frigid\* OR impot\* OR "erectile dysfunction\*" OR "erectile function\*" OR "urinary complication\*" OR retention\* OR incontinenc\* OR UTI OR "urinary tract infection\*" OR "urine out\*" OR "water-electrolyte imbalanc\*" OR "infect\*" OR ston\* OR "renal calculi" OR "kidney calculi" OR nephrolith\* OR urolithi\* OR cramp\* OR "colored urin\*" OR "cloudy urine" OR dysuria OR nocturia OR oligur\* OR polyg\* OR proteinur\* OR urinoma\* OR continence).

**Participant or population:** Adult patients diagnosed with prostate cancer who underwent robot-assisted radical prostatectomy or laparoscopic radical prostatectomy who have been followed up for urinary or sexual complications.

**Intervention:** Robot-assisted radical prostatectomy.

**Comparator:** Laparoscopic radical prostatectomy.

**Study designs to be included:** Randomized controlled trials, non-randomized comparative studies, and cohort studies

**Eligibility criteria:** We will include randomized controlled trials and prospective, retrospective, and historical non-randomized comparative studies and cohorts comparing laparoscopic-assisted radical prostatectomy and conventional

laparoscopic radical prostatectomy. Their participants are adult males diagnosed with localized prostate cancer confirmed clinically and histologically by a physician. Studies should compare at least one of urinary and sexual complications between RARP and LRP, such as incontinence and impotence. Follow-up of the complications should be done for at least one month after surgery. English full-text availability is another inclusion criterion. Single-arm trials, case reports, and case series studies will not include in this review. The study would be excluded if patients were previously treated for prostate cancer with other methods (such as surgery, brachytherapy, hormone therapy, and other methods). Studies that report any conflict of interests also will be excluded.

**Information sources:** Pubmed, EMBASE (via Ovid), WHO Global Index Medicus, Global Health (via Ovid), Cochrane CENTRAL Register of Controlled Trials, Web of Science, SCOPUS, and CINAHL (EBSCO).

**Main outcome(s):** Incontinence and impotence.

**Additional outcome(s):** Urinary bother, urinary function, sexual bother, and sexual function.

**Data management:** We formed various search strings for multiple databases, and the results were collected and exported to EndNote ver. 20. Following removing duplicates, the studies were extracted to the Rayyan website. Two independent authors are screening articles. Any conflicts in screening will be resolved by agreement or third reviewer opinion. Then data extraction will be performed by two independent reviewers into a pre-made data extraction form into Microsoft Excel. The extraction form includes bibliographic data of studies, studies' characteristics and design, patients characteristics, functional and oncological parameters, outcomes and results, and statistical data.

**Quality assessment / Risk of bias analysis:** Two independent reviewers will assess the

quality of studies by Newcastle Ottawa Scale (NOS) for cohorts and RCTs.

**Strategy of data synthesis:** Depending on the outcome variables, we will either use risk ratio(RR) or mean difference(MD) and standardized mean difference(SMD) for analysis. The random effect model will be used if the heterogeneity is more than 50%, and if there is no heterogeneity ( $I^2 \leq 50\%$ ,  $P > 0.10$ ), we will select fixed-effect models. We will use the STATA ver. 15 to perform the meta-analysis.

**Subgroup analysis:** If the data is sufficient, subgroup analysis will be done.

**Sensitivity analysis:** None

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

**Keywords:** Prostatectomy, Robot-Assisted Radical Prostatectomy, Laparoscopic Radical Prostatectomy, RARP, LRP, Systematic Review

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