INPLASY PROTOCOL

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None declared.

Prophylactic tamsulosin against the risk of urinary retention after surgery in male patients

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Review question / Objective: **This meta-analysis aimed to estimate the efficacy of prophylactic tamsulosin on postoperative urinary retention (POUR) in male patients.**
Condition being studied: **Postoperative urinary retention (POUR) is generally defined as a difficulty to micturate with a full bladder after surgery. This condition causes anxiety for patients and is related to poorer patient satisfaction and postoperative outcomes. The published incidences of POUR fluctuate, with a range from 2% to 70%. Multiple researches have identified the risk factors for POUR. Male gender is one of the most prominent risk factors of POUR. The risk of POUR could even be 6 times higher in men than in women. Despite catheterization being commonly applied practice to treat POUR, such intervention is distressing and can introduce risk of catheter-related urinary tract infection, urethral trauma, higher hospitalization cost and delayed discharge. Therefore, surgeons have been interested in prophylactic interventions, such as pharmacological therapies during perioperative period, in order to avoid POUR and the requirements for catheterization. Tamsulosin is one of the wildly-accepted super-selective alpha adrenergic antagonists. Several studies estimated its efficacy on preventing POUR in male patients but the evidence is still controversial. Evaluating the prophylactic efficacy of tamsulosin against POUR in male patients is still a subject of interest and debate. The present systematic review and meta-analysis aims to evaluate the prophylactic efficacy of tamsulosin against POUR in male patients.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 September 2022 and was last updated on 21 September 2022 (registration number INPLASY202290102).

INTRODUCTION

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postoperative outcomes. The published incidences of POUR fluctuate, with a range from 2% to 70%. Multiple researches have identified the risk factors for POUR. Male gender is one of the most prominent risk factors of POUR. The risk of POUR could even be 6 times higher in men than in women. Despite catheterization being commonly applied practice to treat POUR, such intervention is distressing and can introduce risk of catheter-related urinary tract infection, urethral trauma, higher hospitalization cost and delayed discharge. Therefore, surgeons have been interested in prophylactic interventions, such as pharmacological therapies during perioperative period, in order to avoid POUR and the requirements for catheterization. Tamsulosin is one of the wildly-accepted super-selective alpha adrenergic antagonists. Several studies estimated its efficacy on preventing POUR in male patients but the evidence is still controversial. Evaluating the prophylactic efficacy of tamsulosin against POUR in male patients is still a subject of interest and debate. The present systematic review and meta-analysis aims to evaluate the prophylactic efficacy of tamsulosin against POUR in male patients.

METHODS

Participant or population: Patient after suegery.

Intervention: Tamsulosin.

Comparator: Placebo or no treatment.

Study designs to be included: comparative study design (RCT or comparative cohort study).

Eligibility criteria: The following inclusion criteria were used: (1) publications reporting the preventive efficacy of prophylactic tamsulosin against POUR; (2) comparative study design; (3) only male patients included in the studies. We excluded non-English language reports, in vitro researches, case reports, brief reports, conference abstract/posters or reviews. After the removal of duplicates, two authors independently reviewed the titles and abstracts to screen potentially eligible studies. Full-texts were then assessed independently by the same two authors to identify the final list of included publications. In the event that disagreement occurred, a third senior doctor was consulted for final assessment and consensus.

Information sources: PubMed, Embase, Web of Science and Cochrane Library databases were searched in 1st March 2022.

Main outcome(s): The primary outcome was the incidence of POUR.

Additional outcome(s): Adverse events were extracted as secondary outcomes.

Data management: R software and Revman.

Quality assessment / Risk of bias analysis: The modified Jadad Scale and the Cochrane Risk of Bias tool was employed for RCTs, while the Newcastle-Ottawa Scale was used for cohort studies.

Strategy of data synthesis: When comparing the incidence of dichotomous data, such as POUR or adverse events, risk ratio (RR) was calculated with the confidence intervals (CI) by the Mantel-Haenszel (M-H) method.

Subgroup analysis: Subgroup analysis was based on the result of meta-regression. Meta regression was used to identify the potential sources of heterogeneity based on predetermined factors, including publication year, mean age of recruited patients, operative type (urologic surgery or not) and anesthetic type (general anesthesia, neuraxial anesthesia, or mixed). In the first univariate model, each of the predetermined factors was analyzed individually and the factors with P value less than 0.1 were extracted into the next multivariable model. Subgroup analysis would be performed if any potential factor was confirmed in the final model.

Sensitivity analysis: Sensitivity analysis was performed using the leave-one-out analysis.

Language restriction: English.

Country(ies) involved: China.

Keywords: male, prophylactic tamsulosin, postoperative urinary retention, systematic review and meta-analysis.

Contributions of each author:
Author 1 - Hua Li - Author 1 completed the meta-analysis and drafted the manuscript.
Author 2 - Wepeng Zhang - Author 2 completed the meta-analysis and drafted the manuscript.