

# INPLASY

## The prevalence of postoperative urinary retention in patients with benign perianal disease: a systematic review

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### ADMINISTRATIVE INFORMATION

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**Review Stage at time of this submission** - Ongoing - Not specified by author.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202510080

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 January 2025 and was last updated on 20 January 2025.

### INTRODUCTION

**Review question / Objective** The objective of this study was to conduct a comprehensive evaluation of the prevalence of postoperative urinary retention rates in patients with benign perianal diseases.

**Population:** outpatients or inpatients with a confirmed diagnosis of benign perianal disease who had undergone surgical treatment, regardless of their gender, age or ethnicity.

**Study design:** cohort study, case-control study, randomized controlled trial (RCT).

**Outcome:** postoperative urinary retention rate.

**Intervention:** not applicable.

**Comparator:** not applicable.

**Condition being studied** The study focuses on postoperative urinary retention (PUR) in patients who have undergone surgery for benign perianal diseases, such as hemorrhoids, anal fissures, and fistulas. Urinary retention is a common

complication following these surgeries, and understanding its incidence and contributing factors is crucial for improving postoperative care and patient outcomes.

### METHODS

**Participant or population** Outpatients or inpatients with a confirmed diagnosis of benign perianal disease who had undergone surgical treatment, regardless of their gender, age or ethnicity.

**Intervention** Not applicable.

**Comparator** Not applicable.

**Study designs to be included** Cohort study, case-control study, randomized controlled trial (RCT).

**Eligibility criteria** Inclusion criteria:

1. Studies with sample sizes of at least 400 individuals.

2. Literature in Chinese and English.

Exclusion criteria:

1. Duplicate publications.

4. Literature where the basic information is incomplete or unclear, and cannot be extracted or computationally transformed into the required data.

5. Literature for which the full text is not available.

**Information sources** PubMed, EMBase, The Cochrane Library, Web of Science, CBM, CNKI, WanFang Data, VIP.

**Main outcome(s)** Postoperative urinary retention rate: percentage of patients who experience urinary retention following anorectal surgery out of the total number of operations performed.

**Quality assessment / Risk of bias analysis** Newcastle-Ottawa Scale(NOS),Cochrane ROB2 tool.

**Strategy of data synthesis** The statistical analyses were conducted using Stata software, while summary estimation and forest plotting were performed using the Meta package. The heterogeneity between the results of the included studies was analysed using the  $\chi^2$  test, with the size of heterogeneity quantified by  $I^2$ . In the event that there was no statistical heterogeneity among the results of the studies, the fixed-effects model was employed for meta-analysis. Conversely, if there was statistical heterogeneity among the results of the studies, the source of heterogeneity was further analysed, and the random-effects model was used for meta-analysis after eliminating the influence of obvious clinical heterogeneity. The level of analysis was set at  $\alpha = 0.05$ , and obvious clinical heterogeneity was dealt with by subgroup analysis or sensitivity analysis, or by descriptive analysis only.

**Subgroup analysis** Subgroup analysis was conducted based on gender, region, hemorrhoid grade, type of surgery, surgical position, anesthesia method, operation time, hospital stay, complications, and surgical environment. The results showed that the postoperative urinary retention rate in males was 6.1%, higher than in females (4.8%). Postoperative urinary retention rates in Asia, North America, and Europe were 12%, 7%, and 5%, respectively. For hemorrhoid grade, the urinary retention rate for grade IV hemorrhoids was 23%, significantly higher than for grade II and III hemorrhoids (3%). Regarding surgical type, the postoperative urinary retention

rates for perianal abscess surgery, hemorrhoidectomy, anal fistula resection, stapled hemorrhoidectomy, and radiofrequency ablation were 20%, 11%, 10%, 10%, and 2%, respectively. In terms of surgical position, the rates for lateral, lithotomy, and prone folding knife positions were 18%, 10%, and 3%, respectively. Concerning anesthesia methods, the rates for epidural anesthesia, subarachnoid anesthesia, sacral anesthesia, general anesthesia, and local anesthesia were 21%, 15%, 11%, 9%, and 8%, respectively. Lastly, patients with diabetes had a postoperative urinary retention rate of 22%, higher than those without diabetes (10%), while smokers had a retention rate of 14%, higher than non-smokers (11%).

**Sensitivity analysis** Sensitivity analyses were performed by excluding individual studies one by one, and the results did not change significantly, suggesting that the results of the total Meta-analysis were stable.

**Country(ies) involved** China.

**Keywords** Benign perianal disease; Postoperative urinary retention; Prevalence; Meta-analysis; Systematic review.

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