

# INPLASY PROTOCOL

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None declared.

## Intracutaneous Pyonex Therapy as New Option for Postoperative Pain Management following Anorectal Surgery: A Systematic Review and Meta-analysis

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**Review question / Objective:** The current meta-analysis aimed to analyze the efficacy and safety of intracutaneous pyonex therapy (IPT) as a new option for postoperative pain management following anorectal surgery.

**Condition being studied:** Anorectal surgery is a common procedure with a high morbidity rate, and intracutaneous pyonex therapy offers a new approach to optimise postoperative pain management. Our meta-analysis is to validate the effectiveness and safety of intracutaneous pyonex therapy in this area in order to promote this new technique.

**Information sources:** Electronic databases including the Cochrane Library, PubMed, EMBASE, Web of Science, SinoMed, CKNI, WanFang, and VIP.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 11 June 2022 and was last updated on 11 June 2022 (registration number INPLASY202260046).

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### INTRODUCTION

**Review question / Objective:** The current meta-analysis aimed to analyze the efficacy and safety of intracutaneous pyonex therapy (IPT) as a new option for

postoperative pain management. Our meta-analysis is to validate the effectiveness and safety of intracutaneous pyonex therapy in this area in order to promote this new technique.

## METHODS

**Participant or population:** Adult patients with no limitations of age and gender.

**Intervention:** Patients who received IPT as an additional therapy for postoperative analgesia.

**Comparator:** patients who did not receive IPT for postoperative analgesia.

**Study designs to be included:** Randomized controlled trials(RCTs).

**Eligibility criteria:** The exclusion criteria for this study:(1) duplicate literature;(2) failure to provide original data;(3) similar reports or incomplete information;(4) literature type discrepancy;(5) poor quality literature reports.

**Information sources:** Electronic databases including the Cochrane Library, PubMed, EMBASE, Web of Science, SinoMed, CKNI, WanFang, and VIP.

**Main outcome(s):** Main outcomes we analyzed were postoperative visual analog score(VAS), analgesic duration, invalid cases following treatment, and complications.

**Quality assessment / Risk of bias analysis:** The following items investigated were random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other bias. Review Manager, version 5.4(Cochrane Collaboration, Oxford, UK) was used to evaluate and demonstrate the details of risk of bias for the eligible studies. The results of risk-of-bias assessment was ranked as “low”, “unclear”, and “high”. The Grading Recommendations Assessment, Development, and Evaluation (GRADE)

approach was used to assess the quality of evidence for the incorporated outcomes.

**Strategy of data synthesis:** Statistical analysis of the included studies was completed through Review Manager 5.4 software. For continuous variables, the standard mean difference (SMD) and 95% confidence interval (CI) were counted. A pooled risk ratio (RR) and 95% CI were calculated for dichotomous variables. When a P-value was below 0.05, the result was considered statistically significant. Heterogeneity among the included studies was analyzed using the I<sup>2</sup> test. The degree of heterogeneity was determined in combination with I<sup>2</sup> statistic. A I<sup>2</sup> statistic of <50% was not considered obvious heterogeneity and a fixed-effects model was adopted. Conversely, a random-effects model was used.

**Subgroup analysis:** Based on the different timepoints, subgroup analysis was performed on postoperative VAS.

**Sensitivity analysis:** Sensitivity analysis was performed if a I<sup>2</sup> statistic of >50%.

**Language:** None restriction.

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

**Keywords:** pyonex, thumb-tack needle, postoperative pain, anorectal surgery, meta-analysis.

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