

# INPLASY PROTOCOL

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**Conflicts of interest:**  
None declared.

## INTRODUCTION

**Review question / Objective:** To perform a systematic review and meta-analysis to compare the efficacy of and complications associated with antifungal drugs and traditional antiseptic medication for the treatment of otomycosis.

## A Comparison of Antifungal Drugs and Traditional Antiseptic Medication for Otomycosis Treatment: A Systematic Review and Meta-Analysis

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**Review question / Objective:** To perform a systematic review and meta-analysis to compare the efficacy of and complications associated with antifungal drugs and traditional antiseptic medication for the treatment of otomycosis.

**Condition being studied:** The results of this meta-analysis and literature review showed that antifungal drugs and traditional antiseptic medication were effective in relieving symptoms in patients with otomycosis, and the two treatments were associated with different complications.

**Information sources:** The PubMed, EMBASE, GeenMedical, Cochrane Library, CBM, CNKI, VIP and other databases were searched from January 1991 to January 2021.

**INPLASY registration number:** This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 March 2022 and was last updated on 13 March 2022 (registration number INPLASY202230057).

**Condition being studied:** The results of this meta-analysis and literature review showed that antifungal drugs and traditional antiseptic medication were effective in relieving symptoms in patients with otomycosis, and the two treatments were associated with different complications.

## METHODS

**Participant or population:** The research subjects were patients who were clinically diagnosed with otomycosis and whose external auditory canal secretions were positive for fungi.

**Intervention:** Topical drug treatment (the experimental group was treated with antifungal drugs, and the control group was treated with non-antifungal drugs).

**Comparator:** Prognosis and complications.

**Study designs to be included:** Funnel plots were used to detect bias, and the Q test was used to assess heterogeneity. The random-effects model was used for meta-analysis. The t-test was used to assess significance.

**Eligibility criteria:** a. Research type: randomized controlled trial (RCT) or clinical Trial. b. Research subjects: patients who were clinically diagnosed with otomycosis and whose external auditory canal secretions were positive for fungi. c. Treatment method: topical drug treatment (the experimental group was treated with antifungal drugs, and the control group was treated with non-antifungal drugs). d. Research results: patient cure rate, symptom improvement, and complications after medication use (including ear itching, ear distension, ear pain, etc.).

**Information sources:** The PubMed, EMBASE, GeenMedical, Cochrane Library, CBM, CNKI, VIP and other databases were searched from January 1991 to January 2021.

**Main outcome(s):** This meta-analysis and literature review suggests that antifungal drugs and traditional antiseptic medication are effective in relieving symptoms in patients with otomycosis. These treatments also had a significant favorable effect on hearing.

**Quality assessment / Risk of bias analysis:** Since the included studies were mostly retrospective cohort studies, the Newcastle

Ottawa Scale (NOS) was used to assess the risk of bias in the selection of study groups, comparability, and outcomes. A total of 7 items were evaluated, and each item received a score of "1" or "0." The results are included in the basic research information and are displayed together.

**Strategy of data synthesis:** RevMan5.4 software was used for meta-analysis, and  $P < 0.05$  indicated that a difference was statistically significant. Odds ratios (ORs) and corresponding 95% confidence intervals (Cis) were used to analyse dichotomous variables, and the I<sup>2</sup> statistic was used to assess heterogeneity. If  $P > 0.05$  and  $I^2 < 50\%$ , the included studies had no obvious heterogeneity, and the fixed-effect model was used. If  $P < 0.05$  and  $I^2 > 50\%$ , the included studies had obvious heterogeneity, and the random-effects models was used; subgroup and sensitivity analyses were performed to explore the source of the heterogeneity. The analysis results are presented as forest plots, and publication bias is shown in funnel plots.

**Subgroup analysis:** The authors further conducted subgroup analyses according to complications using fixed-effects models. The results indicated no significant difference in the rate of ear itching ( $Z = 0.02$ ,  $P = 0.98$ ), otorrhea ( $Z = 0.14$ ,  $P = 0.89$ ) or deafness ( $Z = 0.88$ ,  $P = 0.38$ ); that is, after medication use, both groups experienced complications of ear itching, otorrhea, and deafness, but the differences were not significant. The differences in the rates of ear distension ( $Z = 2.70$ ,  $P = 0.007$ ), earache ( $Z = 2.11$ ,  $P = 0.03$ ) and tinnitus ( $Z = 2.92$ ,  $P = 0.003$ ) were statistically significant. Patients who received antifungal drugs had lower rates of ear swelling and tinnitus, while patients who received non-antifungal drugs had lower rates of ear pain (Figures 8, 9).

**Sensitivity analysis:** The differences in the rates of ear distension ( $Z = 2.70$ ,  $P = 0.007$ ), earache ( $Z = 2.11$ ,  $P = 0.03$ ) and tinnitus ( $Z = 2.92$ ,  $P = 0.003$ ) were statistically significant. Patients who received antifungal drugs had lower rates of ear swelling and tinnitus, while patients who

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received non-antifungal drugs had lower rates of ear pain.

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

**Keywords:** Antifungal Drugs; otomycosis; treatment.

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