International Platform of Registered Systematic Review and Meta-analysis Protocols

INPLASY

The Clinical Efficacy of Recombinant Human Nerve Growth Factor for Neurotrophic Keratitis

INPLASY202690124
doi: 10.37766/inplasy2026.9.0124
Received: 29 September 2026
Published: 29 September 2026

Wu, BQ; Kuo, HT; Chiang, CC.

Corresponding author:
Jasper Wu

jacky870914@gmail.com

Author Affiliation:
CMUH.

ADMINISTRATIVE INFORMATION

Support - No support.

Review Stage at time of this submission - The review has not yet started.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202690124

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 29 September 2026 and was last updated on 29 September 2026.

INTRODUCTION

Review question / Objective To investigate the clinical efficacy and ocular safety of topical recombinant human nerve growth factor (rhNGF) for the treatment of neurotrophic keratitis.

Rationale What's the clinical efficacy and ocular safety of topical recombinant human nerve growth factor (rhNGF) for the treatment of neurotrophic keratitis?

Condition being studied Randomized evidence remains limited by small sample sizes, heterogeneous treatment regimens and definitions of corneal healing, and relatively short controlled follow-up.

METHODS

Search strategy A comprehensive literature search was performed in PubMed, Scopus, Google Scholar, the Cochrane Central Register of Controlled Trials (CENTRAL), and the China National Knowledge Infrastructure (CNKI) from database inception through August 2026.

Participant or population Enrolled patients diagnosed with neurotrophic keratitis or neurotrophic keratopathy.

Intervention Topical recombinant human nerve growth factor, including cenegermin.

Comparator Used a randomized controlled design comparing rhNGF with vehicle.

Study designs to be included RCT.

Eligibility criteria Studies were included if they met all of the following criteria:
1. Enrolled patients diagnosed with neurotrophic keratitis or neurotrophic keratopathy;
2. Evaluated topical recombinant human nerve growth factor, including cenegermin;

3. Used a randomized controlled design comparing rhNGF with vehicle;
4. Administered rhNGF for at least 4 weeks; and
5. Reported sufficient quantitative data on corneal healing or ocular adverse events.

Information sources PubMed, Scopus, Google Scholar, the Cochrane Central Register of Controlled Trials (CENTRAL), and the China National Knowledge Infrastructure (CNKI).

Main outcome(s) The primary efficacy outcome was corneal healing at weeks 4 and 8, defined as residual fluorescein staining. The primary safety outcome was the occurrence of ocular adverse events.

Additional outcome(s) A sensitivity analysis used a more stringent definition of complete corneal healing.

Data management When a trial included more than one eligible rhNGF dosage group sharing a single vehicle group, the rhNGF groups were combined by summing their events and sample sizes and were compared once with the vehicle group. This prevented double counting of the shared control group, in accordance with the Cochrane Handbook.

Quality assessment / Risk of bias analysis Risk of bias was independently assessed by two reviewers using the revised Cochrane Risk of Bias tool for randomized trials (RoB 2).

Strategy of data synthesis When a trial included more than one eligible rhNGF dosage group sharing a single vehicle group, the rhNGF groups were combined by summing their events and sample sizes and were compared once with the vehicle group. This prevented double counting of the shared control group, in accordance with the Cochrane Handbook.

Subgroup analysis Subgroups on different time points.

Sensitivity analysis Leave-one-out sensitivity analyses were conducted by sequentially excluding each randomized dataset. A sensitivity analysis used a more stringent definition of complete corneal healing.

Language restriction NIL.

Country(ies) involved Taiwan.

Other relevant information NIL

Keywords Recombinant Human Nerve Growth Factor, NK.

Dissemination plans Publish in an academic journal.

Contributions of each author
Author 1 - Bing-Qi Wu.
Email: jacky870914@gmail.com
Author 2 - Hou-Ting Kuo.
Email: a0934305326@gmail.com
Author 3 - Chun-Chi Chiang.
Email: elsachiang25@gmail.com