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**ADMINISTRATIVE INFORMATION****Support** - The author(s) received no financial support for the research.**Review Stage at time of this submission** - Data extraction.**Conflicts of interest** - None declared.**INPLASY registration number:** INPLASY202520072**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 February 2025 and was last updated on 14 February 2025.**INTRODUCTION**

**Review question / Objective** This study systematically assesses treatment efficacy, relapse rates, and prognostic risk factors in anti-NMDAR autoimmune encephalitis through meta-analysis.

**Condition being studied** Current prognostic insights into anti-NMDAR autoimmune encephalitis largely stem from retrospective studies. However, clinical outcomes remain highly heterogeneous, with inconsistent findings regarding prognostic determinants. The underlying factors influencing disease trajectory are not well characterized.

**METHODS**

**Participant or population** Clear diagnosis of anti-NMDAR AE, with no restrictions on diagnostic criteria.

**Intervention** Administer immunomodulatory therapy, such as glucocorticoids, immunoglobulins, etc.

**Comparator** Give immune regulation therapy to patients with poor efficacy and disease recurrence.

**Study designs to be included** Randomized controlled trials (RCTs), cohort studies, or case-control studies.

**Eligibility criteria** Inclusion criteria were as follows: (1) Randomized controlled trials (RCTs), cohort studies, or case-control studies; (2) Clear diagnosis of anti-NMDAR AE, with no restrictions on diagnostic criteria; (3) Data on the prognosis of anti-NMDAR AE and related risk factors; (4) English or Chinese publications to ensure accurate comprehension.

**Information sources** Two researchers (Zhi-gang Qian and Li Hua) independently conducted the literature searches following predefined protocols.

The search covered publications from the inception of each database through July 16, 2024. Databases searched included PubMed, The Cochrane Library, and Embase. Search terms employed included "autoimmune," "autoimmunity," "self-immunity," "encephalitis," "cerebritis," "encephalitides," "neuraxitis," "cephalitis," "phrenitis," "brain fever," "inflammation of brain," "leukoencephalitis," "encephalopathies," "meningoencephalitis," "brain inflammation," "Rasmussen syndrome," "Rasmussen encephalitis," "Rasmussen's syndrome," "prognosis," "prognostic," "prognoses," "risk factor," "dangerous factors," "influencing factors," "influence factors," "affecting factors," and "influential factors."

**Main outcome(s)** Prognostic Factors and Associated Risk Factors in Anti-NMDAR Autoimmune Encephalitis.

**Quality assessment / Risk of bias analysis** The quality of case-control and cohort studies was assessed using the Newcastle-Ottawa Scale (NOS). This scale evaluated three key aspects: the selection of study groups, the comparability between groups, and the ascertainment of exposure or outcome. Scoring followed a star system, with each item receiving 0 to 1 star based on its methodological quality, except for the comparability category, which could receive up to 2 stars. A total score of up to 9 stars was possible, with higher scores indicating higher study quality; a score of 5 or more denoted high quality.

**Strategy of data synthesis** Meta-analyses were conducted using Stata software (version 18.0). The rates of favorable prognosis and relapse were expressed as Effect Size with 95% Confidence Intervals (CIs). Risk factors were quantified using the Odds Ratio (OR) and its 95% CI. Heterogeneity among studies was evaluated using the Q test and I<sup>2</sup> statistic derived from forest plots. When I<sup>2</sup> was less than 50%, indicating low heterogeneity, a fixed-effect model was applied. If I<sup>2</sup> was 50% or higher, a random-effects model was used to combine effect sizes. Publication bias was assessed using funnel plots and the Egger test.

**Subgroup analysis** Prognostic Factors, and Associated Risk Factors in Anti-NMDAR Autoimmune Encephalitis.

**Sensitivity analysis** Recurrence rate.

**Country(ies) involved** China/Dali Bai Autonomous Prefecture People's Hospital.

**Keywords** Autoimmune Encephalitis, Therapeutic Outcomes, Prognosis, Meta-Analysis, Associated Risk Factors.

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