

INPLASY PROTOCOL

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None declared.

Prognostic factors associated with the outcome of anti-vascular endothelial growth factor treatment in patients with myopic choroidal neovascularization: a systematic review and meta-analysis

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Review question / Objective: Myopic choroidal neovascularization (mCNV) is an entity affecting large number of working individuals. Delayed diagnosis and treatment of mCNV may lead to seriously impaired visual acuity. Anti-vascular endothelial growth factor treatment is an effective therapeutic method for mCNV. Various demographic and clinical characteristics have been found among patients with mCNV, which may be associated with the different outcomes of treatment. In this study, we will review the relevant literatures and carry out a meta-analysis to recognize the prognostic factors associated with mCNV.

Eligibility criteria: Studies meeting the following criteria will be included: (1) research design: retrospective or prospective studies; (2) participants: the patients with myopic choroidal neovascularization; (3) intervention: patients were treated with anti-vascular endothelial growth factor therapy. (4) visual functional measures were assessed such as visual acuity. (5) Imaging modalities such as fundus fluorescence angiography and optical coherence tomography (OCT) were used. (6) prognostic or risk factors associated with treatment outcome or recurrence were evaluated.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 April 2022 and was last updated on 08 April 2022 (registration number INPLASY202240047).

INTRODUCTION

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individuals. Delayed diagnosis and treatment of mCNV may lead to seriously impaired visual acuity. Anti-vascular endothelial growth factor treatment is an effective therapeutic method for mCNV.

Various demographic and clinical characteristics have been found among patients with mCNV, which may be associated with the different outcomes of treatment. In this study, we will review the relevant literatures and carry out a meta-analysis to recognize the prognostic factors associated with mCNV.

Condition being studied: Myopia is a common disorder estimated to affect approximately 1.6 billion people worldwide, among which 27%–33% present high myopia. Ocular complications and vision loss associated with this disorder also increase globally. One of the most serious complications of myopia is myopic choroidal neovascularization (mCNV), which can lead to sudden and progressively declined central vision, and cause legal blindness or worse if not treated properly. It has been reported that approximately 5% to 11% of individuals with pathologic myopia develop myopic CNV. Also, 35% of patients with mCNV may develop the same disease in the fellow eye within 8 years. Anti-vascular endothelial growth factor treatment is a mainstream therapeutic method for mCNV. However, the prognosis of mCNV can be influenced by various demographic and clinical characteristics. Recognizing these prognostic factors is important for treatment decisions.

METHODS

Participant or population: Patients with myopic choroidal neovascularization.

Intervention: Anti-vascular endothelial growth factor treatment.

Comparator: Patients with different treatment outcomes.

Study designs to be included: Cohort, Case Control and Randomized controlled study.

Eligibility criteria: Studies meeting the following criteria will be included: (1) research design: retrospective or prospective studies; (2) participants: the patients with myopic choroidal

neovascularization; (3) intervention: patients were treated with anti-vascular endothelial growth factor therapy. (4) visual functional measures were assessed such as visual acuity. (5) Imaging modalities such as fundus fluorescence angiography and optical coherence tomography (OCT) were used. (6) prognostic or risk factors associated with treatment outcome or recurrence were evaluated.

Information sources: The PubMed, EMBASE, and Cochrane search engines were referenced to identify relevant studies.

Main outcome(s): The prognostic factors associated with outcome of anti-vascular endothelial growth factor treatment were analyzed, including demographic features such as age and sex, imaging characteristics such as fundus fluorescence angiography and optical coherence tomography.

Quality assessment / Risk of bias analysis: Two authors will assess the risk of bias using the Cochrane Collaboration's tool for risk of bias assessment for all included studies.

Strategy of data synthesis: Meta-analysis was performed for deciding the prognostic factors. Review Manager 5 software was used for results synthesis. If the outcome data were presented in the form of dichotomous categorical variables, ORs would be reported with corresponding 95% confidence intervals (CI). Statistical heterogeneity between studies was checked and reported using the I² measure of study heterogeneity.

Subgroup analysis: Subgroup analysis was performed according to the RCTs or cohort studies.

Sensitivity analysis: When sufficient data are extracted, sensitivity analysis will be conducted to check the stability for the outcome results by removing studies with high risk of bias.

Country(ies) involved: China.

Keywords: Prognostic factors; myopic choroidal neovascularization; anti-vascular endothelial growth factor treatment.

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