INPLASY PROTOCOL

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Efficacy and safety of memantine and donepezil in combination with medopar respectively in the treatment of Parkinson disease dementia: a systematic review and meta analysis

Hu, Y[1]; Zhang, L[2]; Ma, Y[3]; Hou, H[4]; Bi, S[5]; Liu, C[6]; Li, M[7]; Wang, K[8].

Review question / Objective: Would memantine be more effective than donepezil in combination with medopar respectively in the treatment of Parkinson disease dementia? **Eligibility criteria:** (1) Randomized controlled trials on PDD were included, including English and Chinese literature. (2) Patients who are diagnosed with PDD according to the clinical diagnostic criteria of PDD. There was no specific restriction on age, gender, and race. (3) The experimental groups were treated with memantine , while the control groups were treated with donepezil. (4)The clinical total effective rate,minimental status examination (MMSE) score, Hasegawa's dementia scale (HDS) score, adverse reactions were all adopted to estimate therapeutic efficacy and safety of memantine and donepezil in the treatment of VaD.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 22 June 2022 and was last updated on 01 July 2022 (registration number INPLASY202260089).

INTRODUCTION

Review question / Objective: Would memantine be more effective than donepezil in combination with medopar respectively in the treatment of Parkinson disease dementia?

Condition being studied: Parkinson's disease is the second common neurodegenerative disease after Alzheimer's disease. Parkinson's disease dementia, a serious non motor complication, may occur in the later stage of Parkinson's disease, causing a huge economic and psychological burden to

patients and their families. In recent years, with the increasing incidence rate of Parkinson's disease in the population, Parkinson's disease dementia has also become a major medical and social problem. The diagnosis and treatment of Parkinson's disease dementia started late, and there is still a lack of widely recognized diagnosis and treatment plan. Cholinesterase inhibitors such as donepezil have long been widely used in clinic as the first-line drugs for the treatment of mild to moderate Alzheimer's disease, while excitatory amino acid receptor antagonists such as memantine have been widely used as drugs to alleviate moderate to severe Alzheimer's disease. There have been studies on the treatment of Parkinson's disease and dementia with these two drugs respectively, but most of them are single center and small sample size studies, which have not been systematically evaluated. Through the method of systematic evaluation, this paper evaluates the efficacy and safety of donepezil and memantine in combination with medopar respectively in the treatment of Parkinson's disease dementia, so as to provide basis for clinical medication.

METHODS

Participant or population: Patients who are diagnosed with Parkinson disease dementia according to the clinical diagnostic criteria of Parkinson disease dementia or other diagnostic criteria for PDD will be included. There was no specific restriction on age, gender, and race.

Intervention: Memantine combined with medopar is the main intervention.

Comparator: Donepezil combined with medopar is the main comparator.

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

Eligibility criteria: (1) Randomized controlled trials on PDD were included, including English and Chinese literature. (2) Patients who are diagnosed with PDD according to the clinical diagnostic criteria

of PDD. There was no specific restriction on age, gender, and race. (3) The experimental groups were treated with memantine , while the control groups were treated with donepezil. (4)The clinical total effective rate,mini-mental status examination (MMSE) score, Hasegawa's dementia scale (HDS) score, adverse reactions were all adopted to estimate therapeutic efficacy and safety of memantine and donepezil in the treatment of VaD.

Information sources: China National Knowledge Infrastructure (CNKI), Wanfang database (Wanfang), Chinese Science and Technology Periodical Database (VIP), China Biology Medicine disc (CBM), MEDLINE, EMBASE, and Cochrane Library

Main outcome(s): Total effective rate, mini-mental status examination (MMSE)score, activity of daily living scale score(ADL) are the main outcomes.

Quality assessment / Risk of bias analysis: Two researchers will independently use the Cochrane risk-of-bias tool to methodological quality of the included trials. If there is insufficient data, we would try to contact the authors. If the data is missing, we will exclude the study.

Strategy of data synthesis: We will use RevMan 5.3 software for meta-analysis and heterogeneity test of literature. I square test will be used to detect the heterogeneity among included trials. The trials with significant heterogeneity ($P < 0.10$, $I2 > 50\%$) will be analyzed by random effects model; For the trials with small heterogeneity ($P > 0.10$, $I2 < 50\%$), the fixed effects model will be used for analysis.

Subgroup analysis: If the number of studies in each comparison is small, there will be no subgroup analysis performed. Otherwise, We will record treatment duration of every RCT as the basis for subgroup analysis.

Sensitivity analysis: We will use the method of excluding each study one by one for the sensitivity analysis.

Country(ies) involved: China.

Keywords: Parkinson disease dementia; medopar; memantine; donepezil; meta-analysis.

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