INPLASY PROTOCOL

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Corresponding author:
Kangfeng Wang

wkfszy@163.com

Author Affiliation:
Shandong university of Traditional Chinese Medicine.

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None declared.

Comparing the efficacy and safety of memantine and donepezil for 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 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,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.**

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 22 June 2022 (registration number INPLASY202260089).

INTRODUCTION

Review question / Objective: **Would memantine be more effective than donepezil 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 may have Parkinson's disease dementia, a serious non motor complication, in its later stage, which causes a huge economic and psychological burden for 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 programs. Cholinesterase inhibitors such as donepezil have long been widely used in clinic as 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 for the alleviation of 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. In this paper, the efficacy and safety of donepezil and memantine alone in the treatment of Parkinson's disease dementia were evaluated by the method of systematic evaluation. 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 were searched for randomized controlled trials on memantine and donepezil for PDD. RevMan 5.3 software was used for data analysis.

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 is the main intervention.

Comparator: Donepezil 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; memantine; donepezil; meta-analysis.

Contributions of each author:

Author 1 - Yibin Hu.
Email: 1301163720@qq.com
Author 2 - Lijuan Zhang.
Email: szywkf@163.com
Author 3 - Yizheng Ma.
Author 4 - Hanru Hou.
Email: houhanruxx@163.com
Author 5 - Shuyue Bi.
Email: bishuyue9227@163.com
Author 6 - Changning Liu.
Email: lcnjk966@qq.com
Author 7 - Mingxiang Li.
Email: leemingxiang@126.com
Author 8 - Kangfeng Wang.
Email: wkfszy@163.com