Efficacy and Safety of Safinamide vs Opicapone as Adjuvant to Levodopa Therapy in Elderly with Parkinson's Disease: A Network Meta-Analysis

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Abstract:

Introduction: Parkinson's disease (PD) becomes a significant health problem in the elderly. This chronic and progressive neurodegenerative disease needs to be treated with dopamine agonists as the current gold standard of care. The use of adjuvant therapies like safinamide and opicapone was considered as a promising option to achieve a better outcome.However, they haven't been compared in randomized controlled trials.

Objective: To compare the efficacy and safety of safinamide and opicapone as adjuncts to levodopa therapy for PD treatment.

Method: This systematic review and network meta-analysis of randomized controlled trials were conducted based on the PRISMA NMA Checklist of Items. The outcome of this study was to evaluate the efficacy (ON-time, OFF-time, Unified Parkinson's Disease Rating Scale [UPDRS-III], and the 39-Item Parkinson's Disease Questionnaire [PDQ-39]) and the safety of safinamide and opicapone in PD. Effect sizes were analyzed using both pairwise and Bayesian network meta-analyses.

Results: Fourteen RCTs were included in this study. Efficacy analyses showed that safinamide (*MD* = 0.87 h, 95% CrI = 0.31 - 1.48) was superior in increasing total ON-time compared to opicapone (*MD* = 0.82 h, 95% CrI = 0.18 - 1.47).

Safinamide also showed superiority in reducing OFF-time (*MD* =-1.33 h, 95% CrI =-2.45 - -0.196), UPDRS-III score (*MD* =-2.8, 95% CrI =-3.92 - -1.66), and PDQ-39 score (*MD* =-2.05, 95% CrI =-3.47 - -0.702). Safety analysis also showed that safinamide (*OR* = 1.04, 95% CrI = 0.83 - 1.3) is more tolerable for older patients than opicapone (*OR* = 1.32, 95% CrI = 0.95 - 1.81).

Conclusion: To conclude, our findings support the use of safinamide in elderly patients with PD, which effectively helps levodopa improve ON-time, better tolerate motor and non-motor features during the OFF period, and increase the quality of life with minimal adverse effects.