Cureus

Sodium Oligomannate (GV-971) Safety and Efficacy in the Treatment of Alzheimer's Disease: A Systematic Review and Meta-analysis of Randomized Controlled Trials

Open Access
Abstract
Published 07/23/2024

Amr Elrosasy, Abdelraouf Ramadan [2], Nagham Abdelhalim [3], Linda Alkassas [3], Hadeer Abd al-azim [4], Nour Aldeen Mahmoud [3], Menna Kamel [3], Sara Metwally [3], Mugahed Qarma [3], Ahmed Sardahi [3], Bothaina Touhami [3], Noha A. Abdelmoneim [5], Yusra Arafeh [6]

1. 2. Helwan faculty of medicine, Helwan University, Helwan faculty of medicine, Cairo, EGY 3. Faculty of Medicine, Cairo University, Cairo, EGY 4. Public Health, Faculty of Medicine, Cairo University, cairo, EGY 5. Public Health, Faculty of Medicine, Cairo University, Cairo, EGY 6. Faculty of Medicine, Jordan University of Science and Technology, Amman, JOR

Corresponding author: Amr Elrosasy, amromahmoud2003@gmail.com

Categories: Neurology, Therapeutics
Keywords: gv-971, sodium oligomannate, alzheimer's disease

How to cite this abstract
Elrosasy A, Ramadan A, Abdelhalim N, et al. (July 23, 2024) Sodium Oligomannate (GV-971) Safety and Efficacy in the Treatment of Alzheimer's Disease: A Systematic Review and Meta-analysis of Randomized Controlled Trials . Cureus 16(7): a1279

Abstract

Objective: This meta-analysis evaluates the safety and effectiveness of sodium oligomannate in treating Alzheimer’s disease using data from randomized controlled trials.

Background: Alzheimer’s disease (AD) significantly impairs cognitive function and represents a major global health issue. The amyloid hypothesis highlights an imbalance in Aβ protein. Sodium oligomannate (GV-971), derived from marine sources, has shown promise in animal studies by reducing Aβ deposition and neuroinflammation. Further research aims to confirm its therapeutic benefits.

Design/Methods: We searched four electronic databases—PubMed, Scopus, WOS, and Cochrane—for randomized controlled trials (RCTs) comparing GV-971 to placebo in treating Alzheimer’s disease, from March 1, 2023, to April 1, 2023. This meta-analysis assessed outcomes using the Assessment Scale-Cognitive Subscale 12 (ADAS-COG12), Alzheimer’s Disease Cooperative Study–Activities of Daily Living Scale (ADCS-ADL), Neuropsychiatric Inventory (NPI), and evaluated safety and potential adverse effects.

Results: The analysis included three RCTs with a total of 1108 patients. For ADAS-COG12, sodium oligomannate showed a significant advantage over placebo (MD = −2.72, 95% CI [−5.43, −0.02], p = 0.05). However, the pooled analysis for ADCS-ADL and NPI did not show a significant difference between the two groups (MD = 1.80, 95% CI [−2.29, −5.89], p = 0.39) and (MD = −3.41, 95% CI [−12.26, 5.43], p = 0.45), respectively.

Conclusions: This meta-analysis indicates that GV-971 significantly improves ADAS-COG12 scores in Alzheimer’s disease patients compared to placebo. GV-971 demonstrates similar efficacy to donepezil in treating Alzheimer’s disease and has a favorable safety profile and tolerance.