Format: Abstract

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Changes in metabolites after treatment with memantine in fibromyalgia. A double-blind randomized controlled trial with magnetic resonance spectroscopy with a 6-month follow-up.

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Abstract

AIM: To evaluate the efficacy of memantine on metabolite levels in different areas of the brain and to determine whether changes in metabolite levels correlate with clinical variables in Fibromyalgia (FM) patients.

METHODS: Doubled-blind parallel randomized controlled trial. Twenty-five patients diagnosed with FM were enrolled in the study. Patients were administered questionnaires on pain, anxiety, depression, quality of life, and cognitive impairment, and single-voxel MRS of the brain was performed. All assessments were performed at baseline and after 6 months of treatment with memantine or placebo.

RESULTS: Patients treated with memantine exhibited a significant increase in the glutamate (P = 0.010), glutamate/creatine ratio (P = 0.013), combined glutamate + glutamine (P = 0.016) and total N-acetyl-aspartate (NAA+NAAG) (P = 0.034) in the posterior cingulate cortex compared with those on placebo. Furthermore, the memantine group exhibited increases in creatine (P = 0.013) and choline (Cho) (P = 0.025) in the right posterior insula and also a correlation between choline and the Fibromyalgia Impact Questionnaire (FIQ) in the posterior insula (P = 0.050) was observed.

CONCLUSION: Memantine treatment resulted in an increase in cerebral metabolism in FM patients, suggesting its utility for the treatment of the illness.

KEYWORDS: Chronic pain; Fibromyalgia; Magnetic Resonance Spectroscopy; Memantine; Randomized controlled trial

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