Introduction: Several randomized, placebo-controlled trials have demonstrated significant benefits of memantine vs. placebo in patients with moderate to severe Alzheimer's disease (AD); however, the benefits observed in trials of patients with mild to moderate AD have been less consistent. It is of interest to determine more precisely the severity range in which memantine could be expected to provide benefits.

Aims: To investigate the efficacy of memantine as a function of baseline MMSE score.

Methods: Patients from three randomized, double-blind, placebo-controlled trials of memantine (20 mg) in mild to moderate AD (MMSE range: 10-23) were pooled. For each baseline MMSE value, a mean change from baseline was calculated for measures of cognition (ADAS-cog), function (ADCS-ADL), global status (CIBIC-Plus), and behavior (NPI). Data (intent-to-treat population, observed cases) were analyzed by means of a quadratic mixed model corrected for baseline score.

Results: The pooled dataset comprised information from 713 memantine-treated and 559 placebo-treated patients. Memantine treatment was associated with significant benefits compared to placebo within the MMSE range of 12-20 for the ADAS-cog, 15-18 for the ADCS-ADL, and 10-17 for the CIBIC-Plus; no significant differences were seen between groups on the NPI.

Conclusions: In this pooled analysis of patients with mild to moderate AD, memantine treatment was associated with significant cognitive, functional, and global benefits in patients with MMSE scores in the middle to upper end of the moderate range, corresponding to the early moderate stage of AD.