Differential effect of gabapentin therapy on cognitive functions in healthy individuals

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Gabapentin is a GABA analogue used to treat partial seizures, neuropathic pain and off-label for treatment of anxiety disorders. There is no clear evidence for gabapentin therapy in any psychiatric indications (Systematic review Berlin RK). Gabapentin has abuse potential due to its anxiolytic properties and additive effect with opioids. We aimed to explore effects of gabapentin use on cognitive functioning based on results of clinical trials. We carried out a literature search for a period 1995 to March 2019 in three databases (PubMed, Embase, Cochrane) using: gabapentin AND cognition, gabapentin AND memory. Inclusion criteria were the following: randomized controlled trial, cognition test(s), no additional pharmacological manipulations, healthy individuals. After the application of inclusion criteria a total of 7 articles out of 66 were included. 5/7 of the studies showed that gabapentin has negative effect on short term memory, problem-solving tasks, recall ability or mood. 1 stated there is no significant effect on driving performance. 6/7 studies showed some negative effects on simulated driving performance, vigilance, reaction time, finger tapping or other motor skills. Subjective complaints of negative cognitive effects were as often as with carbamazepine or topiramate when compared, despite the objectively milder cognitive effects of gabapentin. Multiple studies on healthy volunteers suggest that the cognitive effects of gabapentin are less severe than those associated with carbamazepine or topiramate used for same indications. Longest randomized double-blind crossover comparison study (Salinsky MC) compared gabapentin with carbamazepine during 12-week period. In 8 of the 31 neuropsychological measures assessed gabapentin had better performance.