

ARE CHANGES IN BEHAVIOUR REALLY ASSOCIATED WITH LEVETIRACETAM?

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Aim: To investigate the evidence-base for often cited "behavioural" side-effects of levetiracetam.

Methods: Design: systematic review/meta-analysis of side-effects of adjuvant-levetiracetam in treatment-resistant partial-onset epilepsy. Searched: PubMed (MEDLINE, 1948-April 2011); Cochrane Epilepsy Group's Specialised-Register (April 2011) and CENTRAL-2011. Included: Placebo-controlled RCTs. Extracted and pooled: Side-effects data. Analysis: The proportion of participants experiencing each side-effect per treatment-group and relative risks (RR [99% confidence intervals]).

Results: Ten trials included (1831 participants, drug-dose range 60 mg/kg/day to 4000 mg/day) of which two were paediatric (296 participants). No individual behavioural side-effect affected more than 1% of participants or was significantly associated with levetiracetam over placebo: 0.98% experienced "hostility" (RR 1.92 [0.56, 6.60]); 0.82% "personality disorder" (RR 1.10 [0.30, 3.95]); 0.66% "nervousness" (RR 4.80 [0.68, 34.14]); 0.60% "depression" (RR 1.41 [0.25, 7.85]); 0.60% "aggression" (RR 1.42 [0.27, 7.42]); 0.55% "agitation" (RR 6.17 [0.66, 57.79]); 0.55% "emotional lability" (RR 1.44 [0.28, 7.29]); 0.49% "psychomotor hyperactivity" (RR 0.42 [0.08, 2.19]); 0.27% "irritability" (RR 11.28 [0.26, 495.63]); 0.27% "abnormal behaviour" (RR 5.92 [0.14, 255.98]); 0.22% "altered mood" (RR 4.85 [0.11, 216.99]); 0.22% "anxiety" (RR 4.85 [0.11, 216.99]); and 0.16% "dissociation" (RR 0.14 [0.00, 6.77]). With all effects combined, 4.53% were affected (RR 1.87 [1.19, 2.95]: 22.64% of children (RR 1.90 [1.16, 3.11] and 1.04% of adults (RR 1.79 [0.59, 5.41]).

Conclusion: Although clinicians and guidelines often cite changes in behaviour as some of the most frequent side-effects of levetiracetam, it's questionable whether there is a strong evidence base for this (at least in adults). This discrepancy requires further investigation.