### printepilepsy

#### 60575 Levetiracetam add-on for drug-resistant focal epilepsy: an updated Cochrane systematic review and meta-analysis

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**Objective:** To evaluate the effectiveness of adjuvant levetiracetam in drug-resistant focal epilepsy. This is an update to the 2001 and 2012 reviews.

**Methods:** The search included the Cochrane Register of Studies and MEDLINE to 09/2018 for randomised, placebo-controlled trials of add-on levetiracetam in drug-resistant focal epilepsy. Two authors independently performed study selection, data extraction, and risk of bias assessments. Outcomes included ≥50% reduction in seizure frequency (response) and adverse effects. We performed Mantel-Haenszel meta-analyses for risk ratios (RR), with 95% CI (99% for adverse effects). We assessed heterogeneity using I².

**Results:** This update includes 14 trials (three more than the previous update), assessing 2,452 participants (296 children). Risks of bias were predominantly low. There were important levels of heterogeneity across multiple comparisons. There were two new findings:

1) Levetiracetam at either 500 mg/day or 4000 mg/day did not perform better than placebo for response (500 mg: RR 1.60, CI 0.71-3.62; 4000 mg: RR 1.64, CI 0.59-4.57). Levetiracetam was significantly better than placebo at all other individual doses (1000-3000 mg).

2) Odds of achieving response were increased by nearly 40% (odds ratio 1.39, CI 1.23-1.58) for each 1000 mg increase in dose of levetiracetam.

Somnolence remained the most common adverse effect, and changes in behaviour were negligible overall.

**Conclusions:** It seems reasonable to continue using levetiracetam in drug-resistant focal epilepsy, although a 500-mg dose may be no more effective than placebo.