Anticancer Drugs. 2025 Jul 21. doi: 10.1097/CAD.0000000000001746. Online ahead of print.

Effect of valproic acid and levetiracetam administration on the survival of glioma patients: a meta-analysis study

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PMID: 40699178 DOI: 10.1097/CAD.0000000000001746

Abstract

In this meta-analysis study, the effect of valproate (VPA) and levetiracetam (LEV) on the survival of glioma patients taking temozolomide (TMZ) was investigated. The cumulative hazard ratios (HR) of overall survival (OS) and progression-free survival from published clinical studies were determined using a random effects model to estimate the strength of the association between VPA/LEV and survival in glioma patients. The results showed that VPA (data from 2304 patients from 14 clinical trial studies) and LEV (data from 1610 patients from 11 clinical trial studies) increase OS by 20% [HR = 0.80; 95% confidence interval (CI), 0.69-0.94; P = 0.01] and 18% (HR = 0.82; 95% CI, 0.68-0.98; P = 0.03), respectively. Use of VPA and LEV as anticonvulsant drugs increased the OS of patients with glioma taking TMZ to an almost equal extent. These findings need to be confirmed in larger prospective studies.

Keywords: anticonvulsant drugs; glioblastoma; levetiracetam; meta-analysis; mortality; valproate.