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The complexities underlying epilepsy in people with glioblastoma

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Abstract

Seizures are among the most common clinical signs in people with glioblastoma. Advances over the past 5 years, including new clinical trial data, have increased the understanding of why some individuals with glioblastoma are susceptible to seizures, how seizures manifest clinically, and what implications seizures have for patient management. The pathophysiology of epilepsy in people with glioblastoma relates to a combination of intrinsic epileptogenicity of tumour tissue, alterations in the tumour and peritumoural microenvironment, and the physical and functional disturbance of adjacent brain structures. Successful management of epilepsy in people with glioblastoma remains challenging; factors such as drug-drug interactions between cancer therapies and antiseizure medications, and medication side-effects, can affect seizure outcomes and quality of life. Advances in novel therapies provide some promise for people with glioblastoma; however, the effects of these therapies on seizures are yet to be fully determined. Looking forward, insights into electrical activity as a driver of tumour cell growth and the intrinsic hyperexcitability of tumour tissue might represent useful targets for treatment and disease modification. There is a pressing need for large randomised clinical trials in this field.