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Epilepsy and the subsequent risk of cerebral tumour: record linkage retrospective cohort study.

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Abstract

Background Studies suggest that seizures may precede the detection of cerebral tumour by several years. **Aim** To quantify the risk of cerebral tumour after new onset seizures, with particular interest in long term risk. **Methods** Using the Oxford Record Linkage Study (ORLS, 1963-1998) and English national linked Hospital Episode Statistics (1999-2005), cohorts of people with a first admission for epilepsy were constructed. Subsequent admissions with cerebral tumour were identified. The rate of occurrence of subsequent cerebral tumour in each epilepsy cohort was compared with that in a comparison cohort and expressed as a rate ratio (RR). **Results** The RR for cerebral tumour after epilepsy, relative to the rate of cerebral tumour in the comparison cohort, was 19.9 (95% CI 17.2 to 22.9) in the ORLS cohort and 19.7 (18.3-21.1) in the England cohort. The RR for malignant tumours were, respectively, 25.6 (21.7 to 30.0) and 27.3 (25.2 to 29.6). The RR for benign tumours were 10.1 (7.38 to 13.6) and 10.4 (9.07 to 11.8), respectively. The risk was highest for those aged 15-44 years at initial admission for epilepsy both in Oxford (24.2, 18.5 to 31.5) and England (38.1, 32.8 to 44.2). The risk of cerebral tumour was still raised several years after initial admission for epilepsy: in the ORLS cohort at 15 14;years or more, the RR was 3.29 (1.39 to 6.66) and, in the England cohort 5-7 14;years after initial admission, the RR was 5.27 (3.87 to 7.06). **Conclusions** Seizures may herald the development of cerebral tumour, remote in time as well as soon after onset, with implications for guidelines on continued surveillance of those with new onset seizures.

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