

Epilepsy and early deaths: the real risks

A recent study suggested that people with epilepsy and comorbid depression or substance abuse problems are at an increased risk of early death. Study authors Achim Wolf and Seena Fazel explain how they came to this conclusion – and what we might do about it



We set out to examine the relationship between epilepsy, mental illness, and premature mortality. We linked nationwide Swedish population registers to obtain data on epilepsy diagnoses, co-occurring psychiatric illnesses, socio-demographic information and causes of death.

We looked at the entire population of patients with epilepsy in Sweden under 56 years old – around 70,000 men and women. These patients were followed over 40 years. We then compared their data to that of over 660,000 controls.

Sweden has similar rates of epilepsy to the UK. As a country, Sweden enables this sort of research to be done as it has high-quality national registers that can be accurately linked for health research. Our study is substantially larger than

previous studies in the field and builds on work from our research group examining links between epilepsy and violent crime.

Our previous work found that, on average, a person with epilepsy was 1.5 times more likely to commit a violent crime compared to someone of the same age and sex but without epilepsy. (This factor is adjusted for socio-demographic differences.) However, this association disappeared when patients with epilepsy were compared to their siblings without epilepsy.

Using sibling controls is a powerful way of teasing out the independent effects of epilepsy. In this case, it suggested that higher rates of violent crime were due to genetic or environmental factors, rather than a result of the epilepsy itself. The public message of this

work was one of dispelling the stigma around the dangerousness of patients with epilepsy. In contrast, our latest study calls for increased awareness of the risks of mental illness and substance abuse.

Overall, we found that people with epilepsy were 11 times more likely to die prematurely (before the age of 56) than the general population. The two largest causes of death were neoplasms (cancer or tumours) and diseases of the nervous system (such as *status epilepticus*). The third largest group was deaths from external (non-natural) causes (suicides, accidents and assaults, for instance). This group accounted for 16 per cent of all deaths in people with epilepsy. Within this group, people with epilepsy were (on average) almost four times more likely to die from suicide, and over five times more

premature mortality

likely to die in non-vehicle accidents. Those risks were particularly elevated in the six months immediately following the epilepsy diagnosis.

We also found high rates of psychiatric diagnoses in people with epilepsy. Forty per cent of those with epilepsy received a diagnosis of mental illness or substance abuse before the age of 56. That compares with just 10 per cent of the general population. Specifically, one in 11 had experienced depression, while one in nine had received a substance abuse diagnosis.

Psychiatric disorders are known to increase rates of early death. As a result, risks of premature mortality were particularly high in those with both epilepsy and co-existing mental illness or substance abuse. For example, those with epilepsy and depression were 23 times as likely to die from suicide compared to individuals with neither epilepsy nor depression. Meanwhile, individuals with epilepsy and substance abuse were 43 times as likely to die in non-vehicle accidents compared to those with neither.

Unlike our research on violence, risks of death in individuals with epilepsy were similar when compared to both the general population, and unaffected siblings. This suggests that epilepsy is an independent cause for the observed increased rates of premature mortality.

So: what do these results mean for people with epilepsy and those

charged with treating them? We have suggested that reducing premature mortality from external causes of death should be a priority in epilepsy management. Those living with some form of epilepsy should be aware of the early warning signs of depression, substance abuse and other conditions. Any such concerns they have should be discussed with their GP or specialist.

For medics and other health professionals working with epilepsy patients, the early identification of mental illness and substance abuse as part of routine checks is key. Carefully assessing and treating those co-existing disorders could help reduce the risk of premature mortality. Treatment guidelines – such as those formulated by the ILEA – could be drawn on. In particular, given our results on the risks of suicide and accidents, we would recommend close monitoring of patients within the first six months after diagnosis.

Our study was funded by the Wellcome Trust and published in *The Lancet* [open access]. It was accompanied by a commentary from Prof Josemir Sander at the Institute of Neurology. Prof Sander points out that ‘is it really epilepsy?’ has long been a mantra in epilepsy management, since misdiagnosis is common. However, he suggests that a new mantra might be needed: ‘epilepsy and what else?’

To answer this important question, greater cooperation between

neurological and psychiatric services is required. Service provision for epilepsy varies throughout the UK from one clinical commissioning group to another and sometimes lacks transparency. The current configuration of services should be clear to all patients and healthcare professionals. We must also carefully consider how they could be improved to address the specific health needs of those with epilepsy given the increased risks implied by certain co-morbidities.

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Further reading

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Glauser et al (2006). ‘ILAE Treatment Guidelines: Evidence-based Analysis of Antiepileptic Drug Efficacy and Effectiveness as Initial Monotherapy for Epileptic Seizures and Syndromes’. *Epilepsia* (Vol 47, Issue 7) pp. 1,094-120

Kerr et al (2011). ‘International consensus clinical practice statements for the treatment of neuropsychiatric conditions associated with epilepsy’. *Epilepsia* (Vol 52, Issue 11) pp 2,133-8

Sander J et al (2004). ‘Reducing mortality: an important aim of epilepsy management’. *Journal of Neurology, Neurosurgery & Psychiatry* (Vol 75, Issue 3) pp. 349–51

Sander J (2013). ‘Comorbidity and premature mortality in epilepsy’. *The Lancet* (Online first, July 22)