

Treatment of new-onset epilepsy: seizures beget discussion

When an individual presents for the first time with a single epileptic seizure or new-onset epilepsy, we spend much time discussing whether to start antiepileptic medication. This complex issue involves weighing up medical, psychological, and sociological factors. We advise the individual and their family that a single seizure is associated with an approximately 50% risk of recurrence. Seizures are associated with an increased risk of injury, which engenders discussion about safety to drive, swim, operate machinery, or engage in many other activities. At some stage, the increased risk of death (albeit small) associated with seizures should be mentioned.

On the other hand, people who have had one or two seizures generally do not feel "ill", and may regard the event as "one off" (which indeed it might be). They may be unwilling to take medication because it is a "bother", or because of side-effects. Some individuals resist treatment because they are unwilling to accept the diagnosis. These are not trifling considerations. Regular antiepileptic medication is an acknowledgment and reminder of epilepsy, a condition that still has some stigma attached.

Beyond the more immediate concerns, the priority is long-term control of seizures. A major issue is the famous aphorism derived from Sir William Gowers¹ that "seizures beget seizures". In other words, repeated seizures might make chronic epilepsy more likely. There are strong experimental data for this in animal studies,^{2,3} but critical analysis of human data provides little evidence to support the hypothesis.⁴ Indeed, limited observations of untreated populations indicate that epilepsy remits spontaneously in a substantial proportion^{5,6} and drugs may not influence outcome.⁷⁻⁹ Thus this issue remains debatable.

On this background, the data provided by Anthony Marson and colleagues in today's *Lancet* are welcome. These investigators did a large and adequately powered study that examined several issues associated with starting medication at first-seizure presentation. We commend the authors for undertaking such a large and relatively complex multicentre study.

Marson and colleagues' major finding is that, in this group of patients, delaying medication did not increase the risk of chronic epilepsy. This result is especially

salient when considered with their other findings. Patients taking immediate medication reported increased (mainly minor) adverse events, no difference in the proportion in paid work, and an increased preference for the alternative treatment policy. Immediate treatment did not appear to improve quality of life, although the response to this section was about 50%. Apart from a decreased risk of proximate seizures, the results of this study suggest there is little to gain in the long term from starting medications immediately. This conclusion applies to the practical problem of starting therapy after the first or first few seizures—it does not imply that withholding therapy in the face of ongoing multiple seizures is appropriate.

In terms of demographics, Marson and colleagues' study population was mainly teenagers and young adults. Whilst this age is typical of the first-seizure patients seen by neurologists, new-onset epilepsy is actually most common in young children and the elderly.¹⁰ Marson's findings would probably broadly apply to these populations. However, in the young, there are developmental issues to consider, with known differences between the biology of seizures in young animals compared with mature animals.¹¹ In the elderly, any increase in risk might have particular importance, because the physical consequences of seizures (ie, fractures and associated immobility) are often greater than in a younger population. Finally, it should be acknowledged that "epilepsy" is not a single condition. Aggressive early treatment of certain progressive epilepsies¹² might be beneficial, but this is an area for future research.

These issues aside, Marson and colleagues' study contributes good-quality evidence for our discussion

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with patients and families about the advisability of medication. In what is often a difficult situation, good data coupled with a clinical synthesis of the risks and benefits that are tailored to the patient's personal circumstances will contribute to optimum treatment decisions. We now need not cloud the matter by the bogie man of "seizures begetting seizures", at least in the context of a single or a few seizures.

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Thyroid cancer after neck irradiation during childhood

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In today's *Lancet*, Alice Sigurdson and colleagues report a detailed analysis of the relation between radiation dose to the thyroid and the risk of developing subsequent thyroid cancer in 72 patients treated for cancer during childhood. The median latent interval to the diagnosis of thyroid cancer was 15.9 years. This time is similar to the latent interval of 13 years (range 6.2–30.1 years) between therapeutic irradiation for

childhood malignancy and the diagnosis of thyroid cancer reported by Acharya et al in 2003.¹ Papillary carcinoma was the most common histological variant in Sigurdson's study, occurring in 78% of all the secondary thyroid cancers.

The paediatric thyroid gland appears to be particularly vulnerable to the oncogenic effects of radiation and the dramatic increase (30-fold) of thyroid cancer in girls under the age of 14 years in Belarus who were exposed to radioactive fallout after the Chernobyl nuclear-reactor explosion is well documented.² Others have also observed that children under 5 years of age at the time of exposure are the most vulnerable to the effects of ionising radiation, with girls being at greater risk than boys.³ Thyroid cancer has also been frequently reported as a second malignancy after successful treatment of childhood cancer, particularly after childhood Hodgkin's disease⁴ and neuroblastoma.⁵ 42% of the 72 patients in Sigurdson and colleagues' study had been treated for Hodgkin's disease compared with 19% of the controls. Thyroid cancer can occur after other childhood malignancies that involve radiation to the neck region, including tumours of the central nervous system, acute lymphoblastic leukaemia, non-Hodgkin lymphoma, Ewing's sarcoma, and Wilms' tumour.^{6,7} Thyroid cancer

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Soviet technician checks child for radiation exposure after Chernobyl accident in 1986