

Evidence-Based Medicine: An Example

A junior medical resident working in a teaching hospital admits a 43-year-old previously well man who has experienced a grand mal seizure. He had never had a seizure before and had not had any recent head trauma. He drank alcohol once or twice a week and had not had alcohol on the day of the seizure. Physical examination is negative. The patient is given the anti-seizure medication phenytoin intravenously and the drug is continued orally. A tomographic head scan is completely normal and an electroencephalogram, measuring electric activity in the brain, shows only nonspecific findings. The patient is very concerned about his risk of seizure recurrence.

How might the resident proceed to advise the patient? We offer two scenarios.

The Traditional Clinical Approach

The resident is told by her senior resident (who is supported in his view by the attending physician) that the risk is high (though he can't put an exact number on it) and that is the information that should be conveyed to the patient. She follows this path, emphasizing to the patient the risks of driving, and the need to continue his medication and to see his family physician in a follow-up visit. The patient leaves in a state of vague trepidation about his risk of subsequent seizure.

The Evidence-Based Medicine Approach

The resident asks herself whether she knows the prognosis of a first seizure, and realizes she does not. She proceeds to the library and, using the Grateful Med program, conducts a computerized literature search. She uses the Medical Subject Headings (MeSH) terms "epilepsy" and "prognosis" and "recurrence" and finds 25 citations. Surveying the titles, one appears most directly relevant. She reviews the paper, finds that it meets criteria she has previously learned for a valid investigation of prognosis, and that the results are applicable to her patient. The search costs \$2.68, and the entire process (including the trip to the library and the time to make a photocopy of the article) takes half an hour.

The results of the relevant study show that the patient's risk of recurrence at one year is between 30 percent and 43 percent, and at three years is between 51 percent and 60 percent. After a seizure-free period of 18 months his risk of recurrence would likely be under 20 percent. She conveys this information to the patient, along with a recommendation that he take his medication, see his family doctor regularly, and have a review of his need for medication if he remains seizure-free for 18 months. The patient leaves with a clear idea of his prognosis.

This example is excerpted from a paper published by the Evidence-Based Medicine Working Group at McMaster University in Ontario, Canada.