First Seizure in Adults

Disclaimer

This pathway is about patients presenting with a possible seizure. See also Epilepsy in Adults if established epilepsy.

Contents

Red Flags

- Seizure associated with fever, neurological deficit, recent trauma, or persistent severe headache
- Prolonged or recurrent seizure (more than one in 24 hours) with incomplete recovery
- Persisting altered level of consciousness
- First seizure or suspected eclampsia in a pregnant woman

Background

About first seizure in adults

- *Approximately 50% of single seizures recur within 2 years.*
- *The probability of recurrence is highest within the first few months.*

Assessment

Practice Point - Multiple seizures in 24 hours

Multiple seizures in a single 24-hour period are considered a single seizure.

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1. *Take a detailed history of the episode:*
    - *Obtain separate histories from the **patient** and any **eyewitness.***

Eyewitness account of seizure events

- *Event circumstances e.g., the trigger*
- *Duration*
- *Any loss of response or consciousness*
- *Any movements*
- *Clinical state after the event, especially any focal deficits*

Obtaining patient history

Determine:

- *what they were doing at the time.*
- *whether there was any loss of awareness.*
- *if there was any:*
    - *prodrome (precursor symptoms).*
    - *biting of the side of the tongue.*
    - *postictal myalgia.*
- *if prolonged (more than 10 minutes), confusion, or amnesia.*

- *Record any further episodes by video, smartphone, or diary.*
- *Drug history – the most common cause of drug-induced seizures are alcohol, synthetic cannabis, amphetamines, and benzodiazepines, both in intoxication and withdrawal.*
- *Medication use – ask about **medications that lower the seizure threshold.** If a patient with a first seizure is taking one of these medications, endeavour to stop that medication if safe to do so.*

Medications that lower the seizure threshold

- *Clozapine*

- *Tramadol*
- *Bupropion*
- *Pethidine*
- *Tricyclic antidepressants*
- *Antihistamines*
- *SSRIs and SNRIs used at therapeutic doses do not appear to provoke seizures*

2. *Differentiate **vasovagal syncope,** migraine, and syncope from a seizure.*

Vasovagal syncope

Vasovagal syncope is common. Vasovagal syncope is distinguished by the situation, the trigger, and the presence of a prodrome.

Consider:

- *Common situations:*
  - *Change in blood pressure – dehydration, heat exposure, pregnancy, postural change*
  - *Prolonged sitting or standing – bathroom, aeroplane, church, supermarket*
  - *Unwell*
  - *New or changed medications*
  - *Pain, sight of blood, or medical procedures*
- *Prodrome:*
  - *Dizziness or lightheadedness*
  - *Bilateral elemental visual effects (e.g., darkening, spots, lights)*
  - *Buzzing, echoing, hearing fade*
  - *Feeling hot, nausea*
- *Event:*
  - *The time from trigger to onset may be 10 to 20 seconds or longer.*
  - *Loss of consciousness is usually brief if the patient falls (up to 30 seconds).*
  - *Rapid recovery (< 60 seconds).*
  - *If the patient does not fall (e.g., they are helped upright by passer-by), then loss of consciousness may be prolonged and recovery slow. Convulsive features such as brief stiffness or a few jerks are then more likely.*
  - *Can occur sitting or standing.*
  - *Urinary incontinence does not differentiate seizure and syncope.*

3. *Consider **causes of provoked epileptic seizures.***

Causes of provoked epileptic seizures

- *Intracranial pathology*
  - *Stroke*
  - *Trauma*
  - *Infection*
  - *Inflammation*
  - *Space occupying lesion*
- *Metabolic causes*
  - *Hypoglycaemia or hyperglycaemia*
  - *Hyponatraemia or hypernatraemia*
  - *Hypocalcaemia or hypercalcaemia*
- *Alcohol and other drugs (intoxication and withdrawal)*

4. Perform an examination:
    - Look for focal neurological deficit.
    - Assess level of consciousness.
    - Take the patient's temperature.

5. Arrange investigations prior to neurologist review:
    - FBE, electrolytes, urea and creatinine, LFT and BGL.
    - ECG
    - EEG (if available)
    - ***MRI brain***

MRI brain

- *Medicare MRI brain rebates are available for children and adults where the indication is "unexplained seizure".*
- *Specify "epilepsy protocol" on the request form – thinner slices are obtained under this protocol.*

6. *In pregnant or postpartum patients, consider:*
    - *Eclampsia.*
    - *Structural cause e.g., meningioma (which can swell during pregnancy), cerebral venous thrombosis (particularly postpartum).*

Management

1. If any red flags, arrange immediate neurology referral or admission.

2. Refer pregnant patients with possible eclampsia for an immediate obstetric assessment via ambulance.

3. In most cases, the patient substantially or completely recovers within minutes. In this case, advise that the patient can go home.

4. Refer all patients with a first seizure for urgent or routine neurology assessment. If seizure aetiology is unclear, proceed with the referral ensuring an MRI brain and ECG are completed prior.

5. Wait until 2 seizures have occurred before starting anti-epilepsy medication, and only via urgent or routine neurology referral or in direct discussion with a neurologist.

    - There is a 40 to 50% chance of another seizure following a first, unprovoked epileptic seizure.
    - If more than one seizure occurs, a diagnosis of epilepsy is likely.

6. Advise patients of mandatory driving stand-downs:
    - Private licence holders can resume driving when they have been seizure-free for 6 months.
    - Longer exclusion periods apply for commercial drivers (including ride-sharing operators).
    - All decisions regarding returning to driving should be made in discussion with the treating neurologist.

7. Give patients and relatives advice on:
    - first aid seizure management.

- recording any further episodes by video, smartphone, or diary.

Referral

- If any ***red flags,*** arrange immediate neurology referral or admission.
- Refer pregnant patients with possible eclampsia for an immediate obstetric assessment via ambulance.
- Refer all patients who have had a first seizure for an urgent or routine neurology assessment. Even for patients who appear to have had a drug induced seizure, except in cases of clear alcohol or benzodiazepine withdrawal seizure.
- If it is not clear whether the event was a seizure or syncopal, request urgent or routine neurology assessment.
    - Arrange an MRI brain and a 12-lead ECG, and an EEG (if available) for all patients prior to their appointment.
    - Specify that the referral is for assessment of a first seizure.
- To start anti-epileptic treatment, or for advice on treatment refer for urgent or routine neurology assessment.

Information

For health professionals

Further information

- Australian Family Physician – Epilepsy in Adults
- Austroads – Assessing Fitness to Drive: Seizures and Epilepsy: 6.2.3 Medical Standards for Licensing

For patients

- Better Health Channel – Epilepsy: First Aid and Safety
- Epilepsy Action Australia
- Epilepsy Foundation – Epilepsy Information

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