Epilepsy with Generalized Tonic Clonic Seizures Alone

Onset usually occurs in the second decade.

Generalised tonic clonic seizures (GTCS) can occur at any time with majority in the early morning often precipitated by sleep deprivation and other external factors.

The EEG shows generalised spike and wave discharges of 3 to 4 Hz and some with photic sensitivity.

This is potentially a lifelong epilepsy.

The seizures are usually well controlled with medication.

DEMOGRAPHICS

Age at Onset: ~5 to 40 years (peak ~11-23 years); ~80% have their first GTCS in the second decade of life.

Genetics: Common genetic generalised epilepsy of complex inheritance.

SYMPTOMS AND SIGNS

Seizure Semiology: All patients suffer from GTCS.

Timing: Occurs predominantly on awakening or related to the sleep-wake cycle.

Neurological and Mental State: Normal

Seizure-Precipitating Factors: Sleep deprivation, fatigue, and excessive alcohol consumption.

INVESTIGATIONS

EEG:
- Usually normal background, with generalized spike and wave or generalised polyspike and wave.

DIFFERENTIAL DIAGNOSIS

- Other Generalised Epilepsies, such as Juvenile Myoclonic Epilepsy and Juvenile Absence Epilepsy, which share the same propensity to GTCS on awakening.
- Genetic Epilepsies with Febrile Seizures Plus.
- Consideration of seizure evolution to bilateral convulsive seizures should be made and any focal features on history or examination should prompt neuro-imaging.
PROGNOSIS

- Epilepsy with GTCS alone on awakening is probably lifelong with high (83%) incidence of relapse on withdrawal of treatment.

MANAGEMENT OPTIONS

- Avoidance of seizure precipitants.
- **Valproate** can be considered and is usually an effective drug, but in women of child bearing age, teratogenicity is a concern. Other AEDs that may be useful include: levetiracetam, lamotrigine, topiramate, and clobazam.
- Sodium valproate has been associated with significant concerns of teratogenicity (i.e. malformations, cognitive impairment, and Autistic Spectrum Disorder). This is particularly true at higher dosages. The risk of teratogenicity increases with increasing dosage. It is important clinicians and women of child bearing age are aware of this risk. Ideally, pregnancies in women with epilepsy should be planned and managed by a neurologist. Medication choices should be selected and discussed keeping in mind the safety of mother and foetus.

DISCUSSION WITH FAMILY

- Safety
- **Epilepsy Medical Record**
- Potential of performing baseline educational assessment (through school counsellor)
- Drug Handout
- Driving

LINK TO USEFUL RESOURCES

- Epilepsy Action (UK) have information for Parents on [Generalized Tonic Clonic Seizures](https://www.epilepsy.org.uk/about-seizures/tonic-clonic-seizures)

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REFERENCES:
