

Predictive models for starting antiseizure medication withdrawal following epilepsy surgery in adults: multicenter model development and validation study

Principal Investigator:

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Objective

Develop and validate a prediction model for seizure recurrence following ASM withdrawal after epilepsy surgery in adults that can be calculated from readily available routine clinical variables.

Rationale

Several studies have identified predictors of seizure recurrence following postsurgical anti-seizure medication (ASM) withdrawal in adults.¹⁻⁶ However, an instrument to synthesize these variables into a prognostic model predicting outcome after postsurgical ASM withdrawal is not available. Previous studies showed the feasibility to develop prognostic models for ASM withdrawal in a non-surgical setting and in paediatric epilepsy surgery.^{7,8} No validated prognostic model exists that enables individualised prediction of seizure outcome after ASM withdrawal following epilepsy surgery in adults.

Study design

Observational prospective multicenter study.

Study population

Inclusion criteria

- The patient has been diagnosed with epilepsy AND
- Underwent resective, non-palliative, epilepsy surgery AND
- Was 18 years or older when surgery was performed AND
- Had at least one year of postoperative follow-up

Exclusion criteria

- The patient had multiple brain surgeries OR
- Had insufficient follow-up data.

Data collection

Candidates were selected from an ongoing prospective surgical database that included all epilepsy surgical patients since 1991.⁹

Inclusion and exclusion criteria were applied to database to select participants.

Electronic and physical medical records were assessed to obtain the following data for each participant included in the final cohort:

- Withdrawal (yes or no) of ASMs after epilepsy surgery
- Date of starting of ASMs withdrawal after epilepsy surgery
- Presence of auras (yes or no) after surgery and before starting ASM withdrawal
- Seizure (any, yes or no) recurrence after starting ASM withdrawal
- Date of seizure (any) recurrence after starting ASM withdrawal
- Seizure (any, yes or no) recurrence after surgery for those that *did not* start ASM withdrawal
- Date of seizure (any) recurrence after surgery for those that *did not* start ASM withdrawal
- Follow up times

Outcomes

The primary outcome was time to recurrence of seizures other than auras (i.e. ILAE outcome Class 3 or worse) after beginning of ASM withdrawal.

Secondary outcomes include seizure recurrence after surgery for those who did not start ASM withdrawal.

Ethics approval and Informed Consent

The Research Ethics Committee classified work as a service evaluation, therefore individual consent from patients was not needed.

References

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