

INTRODUCTION

- ❑ Medically intractable epilepsy patients with frequent breakthrough seizures are often admitted for elective inpatient video EEG monitoring to assess response to their current anti seizure medications (ASM)
- ❑ Therapeutic drug monitoring (TDM) of ASM is routinely done during these admissions
- ❑ In clinical practice, most dosing regimens for pharmacological prophylactic treatment with ASM are based on efficacy (seizure reduction) and/or tolerability (side-effects).
- ❑ Benefits of routine monitoring of ASM levels during these admissions in our clinical practice is unknown

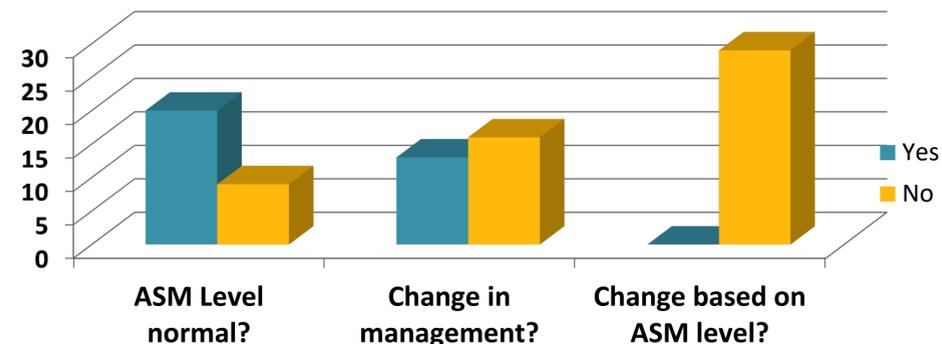
OBJECTIVE AND METHODOLOGY

- ❑ This is a performance improvement quality research project to determine the utility of monitoring ASM level during elective admissions. We are looking to answer the following questions:
 - ❖ Was the ASM level normal or abnormal?
 - ❖ Was there a change in management?
 - ❖ Was there a meaningful medication change based on the level?
- ❑ To achieve this Objective:
 - ❖ Reviewed medical charts of all elective video EEG admissions from September 2021 – December 2021.
 - ❖ Current literature was reviewed on Cochrane, PUBMED, and the data was analyzed

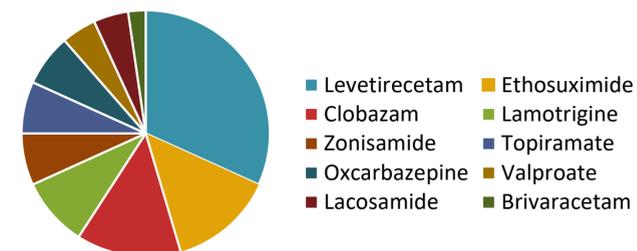
ESTABLISHED UTILITY OF TDM

- ❑ Assisting with dosing in older ASM with complex pharmacokinetics
- ❑ Establishing individual benchmark, adherence & compliance
- ❑ Monitoring pharmacokinetic variability in special situations (aging, pregnancy)

RESULT



44 ASM levels that were monitored in 29 patients



- ❑ Out of the total 101 elective VEEG admissions, 44 ASM levels were obtained in 29 patients
- ❑ Levetiracetam levels were obtained most frequently (14/44)
- ❑ 9/29 had abnormal ASM levels; 5 of them had low levels and 4 had high levels
- ❑ Dosing/Drug regimen was changed for 13/29 patients.
- ❑ No medication changes were made based on ASM levels.
- ❑ Treatment decisions were guided solely based on findings on EEG, ictal/interictal burden and clinical history

CONCLUSION

- ❑ Routine monitoring of ASM is not recommended during elective VEEG admissions

DISCUSSION

- ❑ TDM of most frequently used ASM, Levetiracetam (LEV) is less helpful as it is often a “send out lab” with a time lag in obtaining results .
- ❑ TDM can be helpful in older ASM to establish medication adherence (Phenobarbital, Ethosuximide, Valproate, Carbamazepine) or the ones with zero order kinetics (Phenytoin)
- ❑ Newer ASM have predictable pharmacokinetics better tolerability profile and often with a wider reference range therefore therapeutic ranges must be interpreted with caution, as many patients may be optimally treated at serum concentrations below or above the suggested range

REFERENCES

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