

Abstract – Lejla Garic

Title: Evaluation of Current Practice of Anti-Epileptic Monitoring

Introduction:

Anti-epileptic drugs (AEDs) are commonly used in the pediatric intensive care unit (PICU) for managing various types of seizures. These agents are commonly associated with a multitude of adverse drug events requiring additional oversight including therapeutic drug monitoring, renal dose adjustments, and a drug-drug analysis. Pharmacists are well-suited to provide these additional monitoring services. Creating a consultation service would allow pharmacists to have a set role in AED management and patient-centered care.

Methods:

Data was collected from electronic medical records from September 1st, 2019 to September 1st, 2020. The following elements were collected: patient demographics (age, ethnicity, gender), seizure type, anti-epileptic used, initial dose used, frequency used, total daily dose (TDD), timing of initial drug level and subsequent levels (via pharmacokinetic (PK) data and physician input to establish timing of subsequent levels), dose adjustments, and drug-drug interactions.

Results:

There were 18 concurrent AEDs aside from fosphenytoin/phenytoin. Drug levels for the initial loading dose of an AED were only collected in 33% of patients, 42% of which were inappropriately drawn. A total of 140 drug interactions classified as Level C or D were identified. This resulted in an average of four drug interactions per patient specific to the reviewed AEDs.

Conclusion:

This study shows potential benefit of initiating a pharmacist-led anti-epileptic drug monitoring program. The gaps in comprehensive AED monitoring and patient care can be improved by developing a pharmacist consultation service that focuses on anti-seizure medications. The service, with the help of a neurologist, would outline common medication dosing, timing of drug levels, assessment of drug levels, and recommendations for dose adjustments. The pharmacist would also assess any drug-drug interactions that may further affect drug dosing and potentially change the anti-seizure medication used. This would streamline and standardize the anti-seizure dosing and monitoring process to improve patient care.