

IMPACT OF THE NEW ANTIEPILEPTIC DRUG MONITORING PROGRAM ON THE ACTIVITY OF THE PHARMACY AND NEUROLOGY DEPARTMENTS

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BACKGROUND AND IMPORTANCE

The therapeutic drug monitoring programme (TDMP) is a central part of our clinical pharmacy daily activity, which includes the assessment of drug's blood levels and make pharmacokinetic interventions (PI) which include dose change recommendations if needed. In 2016 we began monitoring the more recently approved or "new" anticonvulsant drugs for both inpatients and outpatients at our hospital. Weekly multidisciplinary meetings were held to revise out-of-range trough drug levels (TDL) on epileptic outpatients, and to make early drug adjustment interventions (EDAI) before their next scheduled clinical follow-up.

Anticonvulsant drugs (AD) analysed quantitatively by our hospital's clinical laboratory are:

Classical AD: (CAD)			
- Phenobarbital	-	Lamotrigine	
- Phenytoin	-	Topiramate	
- Valproate			

Newer AD: (NAD)			
- Levetiracetam (LEV)	-	Rufinamide	
- Lacosamide (LAC)	-	Perampanel	
- Eslicarbazepine	-	Brivaracetam	
- Zonisamide			

AIM AND OBJECTIVES

To evaluate the impact of NAD TDMP on the activity of the Pharmacy and Neurology departments.

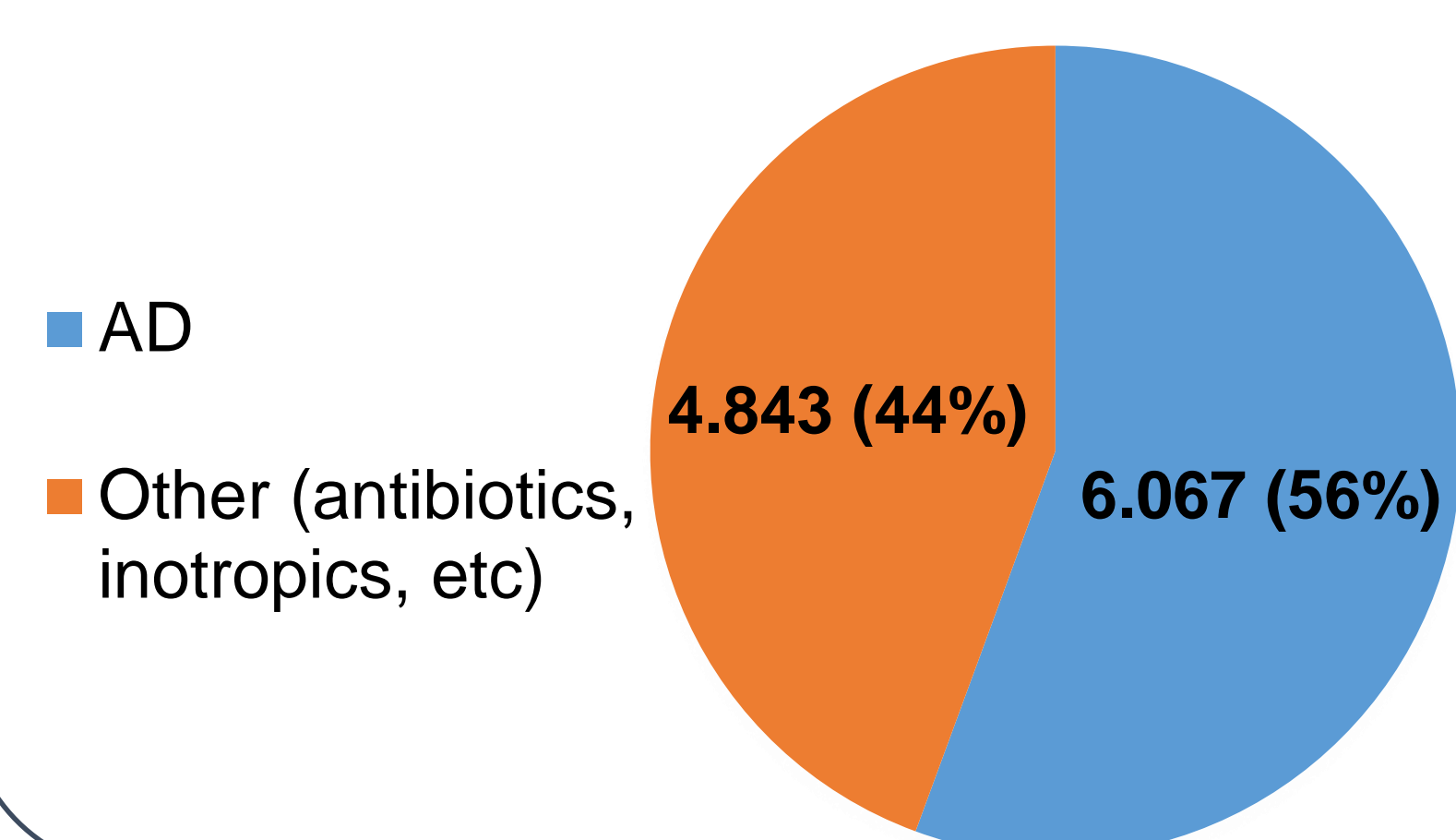
MATERIALS AND METHODS

- ✓ Inpatients: Quantification of pharmacokinetic interventions (PI) and patients monitored between 2016-2021.
- ✓ Outpatients: Activity analysis between July 2017 and May 2019: TDL revision, patients monitored and number of EDAI made. TDL and EDAI percentage calculation for each drug.

RESULTS

INPATIENTS

Activity between 2016 - 2021: 10.910 PI



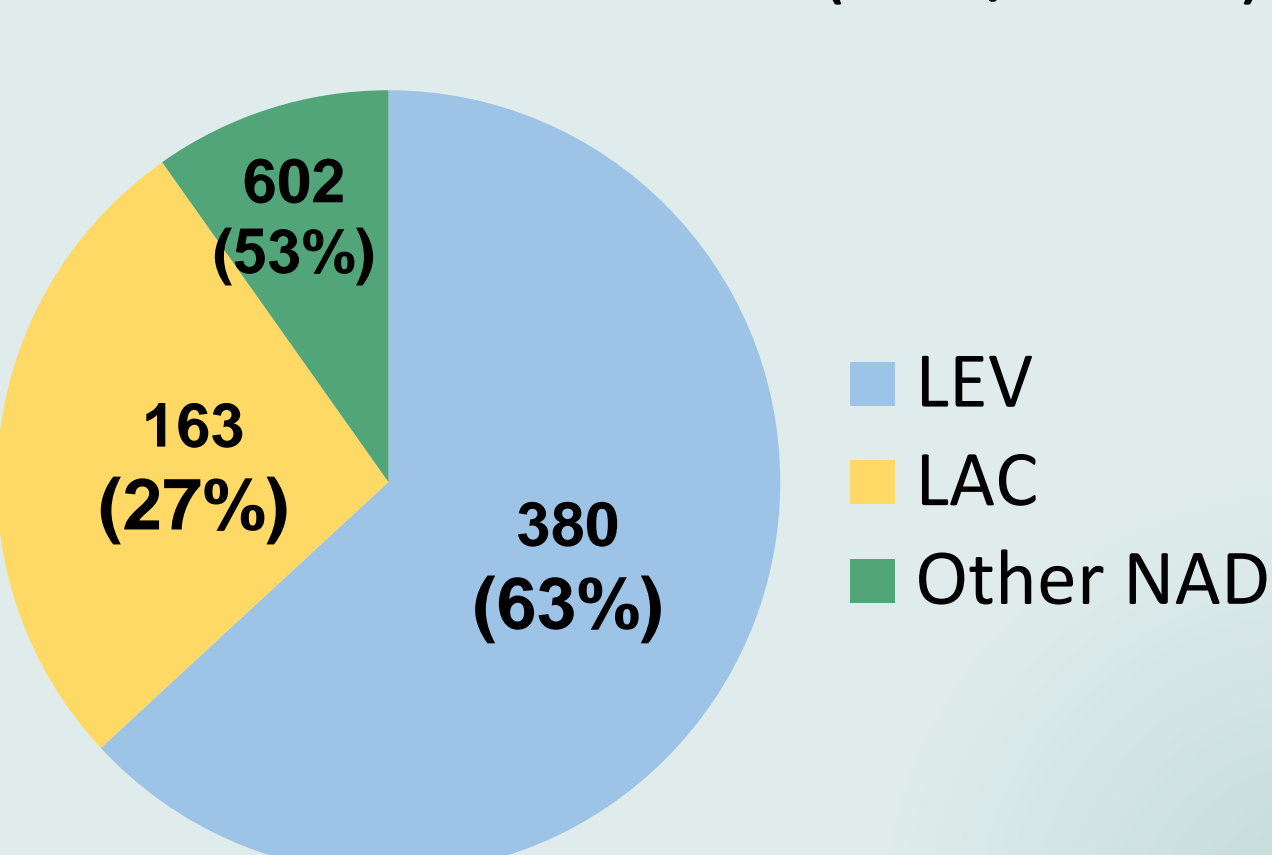
PI variation 2016 through 2021:
- CAD: 934 to 348 (63% decrease)
- NAD: 0 to 602 (100% Increase)

in line with

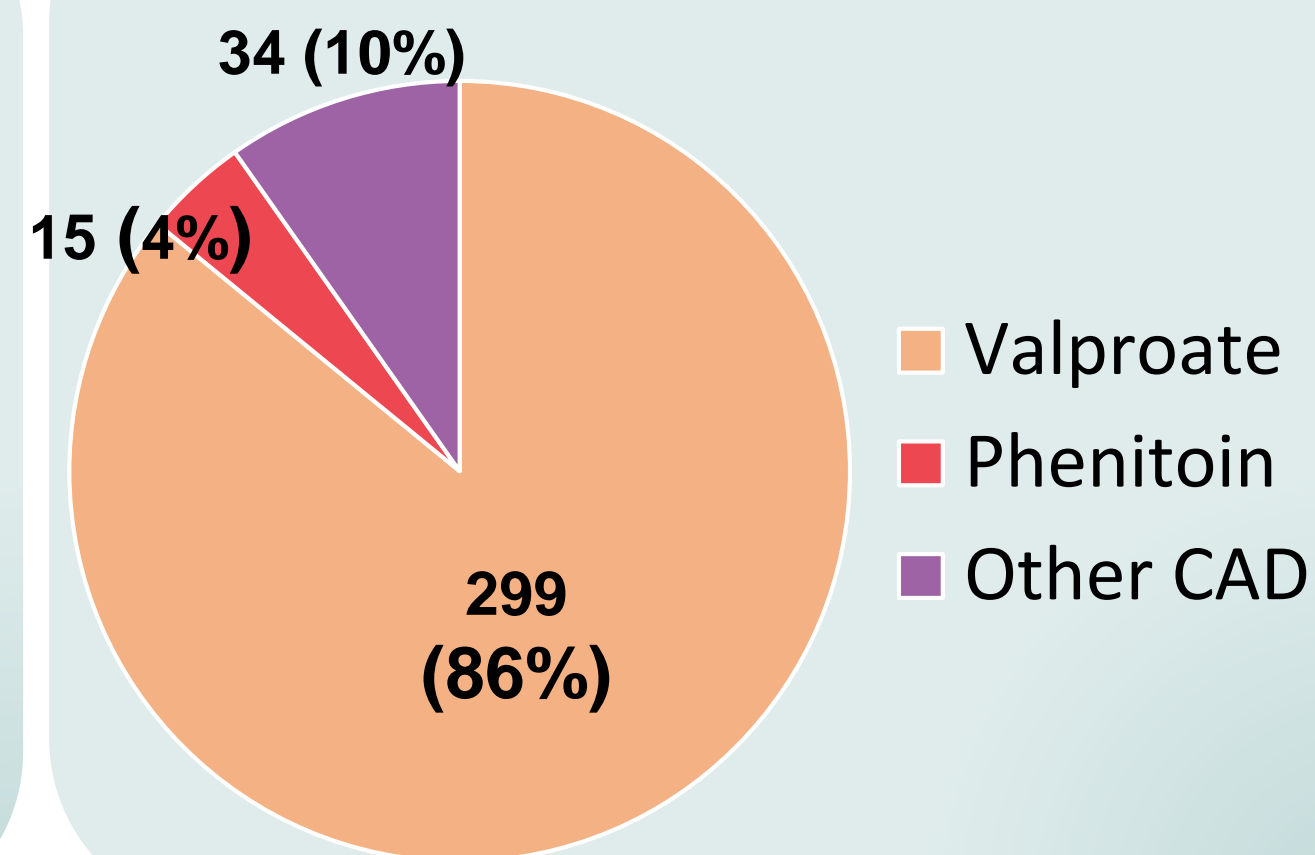
AD prescription variation 2016 through 2021:
- CAD: 754 to 576 (24% decrease)
- NAD: 891 to 1326 (49% Increase)

Yearly AD activity (2021):

NAD = 27% of all PI (602/2.209)



CAD = 16% of all PI (348/2.209)



OUTPATIENTS

TDL 2016-2021: 2.324

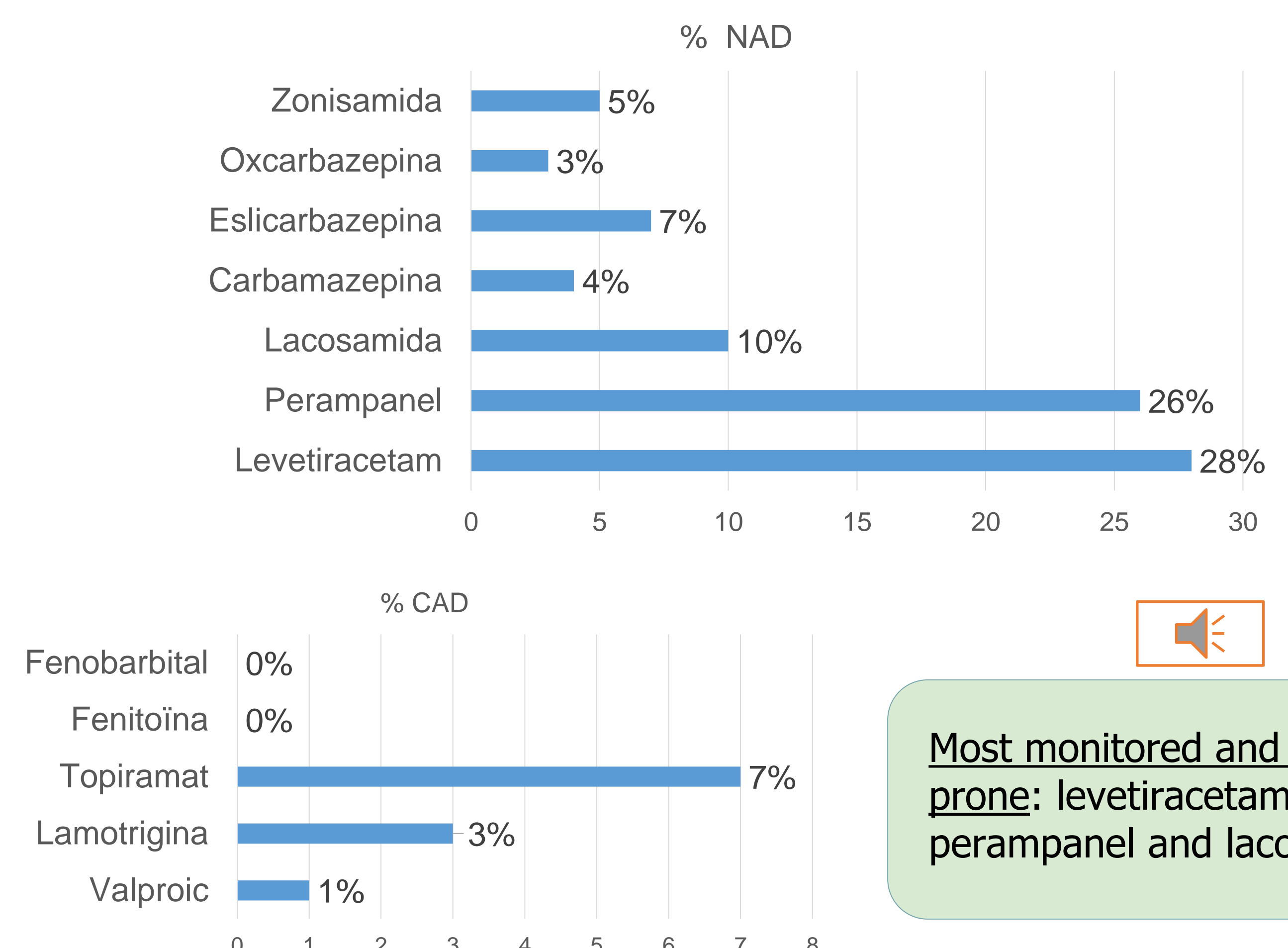
- Patients monitored: 877
- Revised TDL: 1.096 (47%)
- Revised patients: 424 (48%)

EDAI analysis

- Dose ↑: 139 (51%)
- Dose ↓: 92 (34%)
- 273 EDAI*
- 196 (46%) patients with EDAI

*Other EDAI (15%): repeat TDL, treatment discontinuation and compliance check.

Yearly EDAI (2021): % EDAI-prone for each AD



Most monitored and EDAI-prone: levetiracetam, perampanel and lacosamide.

CONCLUSIONS AND RELEVANCE

Inclusion of outpatients to TDMP allowed early drug adjustment of almost half of the revised patients.

The creation of a multidisciplinary team that includes pharmacists and neurologists with a focus on active monitoring of NAD TDL might be significant to better care for epileptic outpatients.

Acknowledgements

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Contact data

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