

Why childhood absence epilepsy is not always a benign epilepsy: a multicentric retrospective study in Flanders

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Financial interest

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Background – Childhood Absence Epilepsy (CAE)

- 10 to 17% of epilepsy in children¹⁻²
- Girls > boys
- Age of onset: generally, 4-10 years³
- Typical absence seizures
- On electroencephalogram (EEG): 3 Hz generalized spike and wave activity

(1) Killory BD et al. Neuroimage. 2011.

(2) Boesen MS et al. Eur J Paediatr Neurol. 2023.

(3) Hirsch E et al. Epilepsia. 2022.

Background – Developmental issues in CAE

- Cognitive development typically normal³
 - But up to 25% with subtle cognitive deficit⁶
- Increased risk of psychiatric comorbidities
 - ADHD^{2,3}, depression and anxiety³
- Difficulties in academic functioning
 - More special needs education²
- Higher risk if no remission of seizures^{4,5}

(2) Boesen MS et al. Eur J Paediatr Neurol. 2023.

(3) Hirsch E et al. Epilepsia. 2022.

(4) Wirrell EC et al. Arch Pediatr Adolesc Med. 1997.

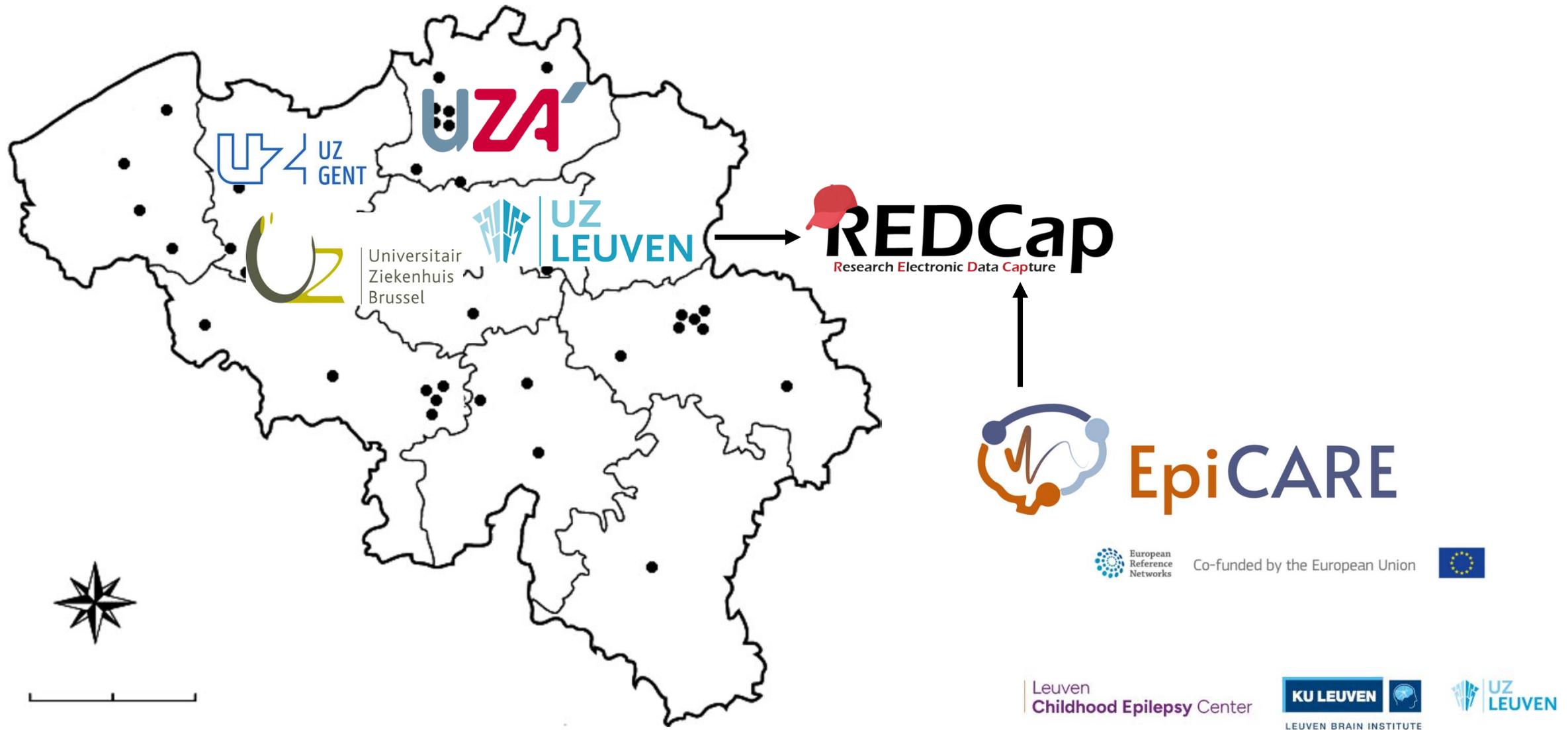
(5) Abarrategui B et al. Epilepsy Behav. 2018.

(6) Caplan R et al. Epilepsia. 2008.

Research objectives

- Demographics of CAE in tertiary hospitals in Flanders
- Seizure freedom and antiseizure medication use
- Impact of CAE on daily life

Methods – Four university hospitals



Methods – Registry and data sharing

EpiCARE

PID 1864

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Record "770" is a new Record ID. To create the record and begin entering data for it, click any gray status icon below.

The grid below displays the form-by-form progress of data entered for the currently selected record. You may click on the colored status icons to access that form/event.

Legend for status icons:

-  Incomplete
-  Incomplete (no data saved) ?
-  Unverified
-    Many statuses (all same)
-  Complete
-  Many statuses (mixed)

NEW Record ID 770

Data Collection Instrument	Status
General	
Neonatal	
Structural	
Genetic	
Metabolic	
Immune	
Infectious	
Flemish Paediatric Drug Treatments	
Flemish Paediatric	



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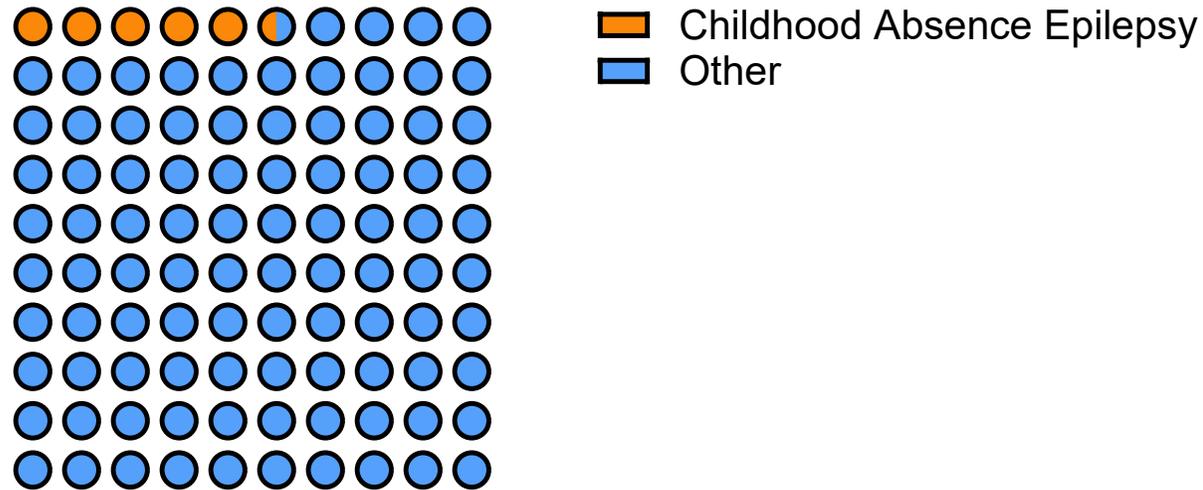
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Results – Demographics

- Total of 2014 patients in the registry
- 5.4% diagnosed with CAE

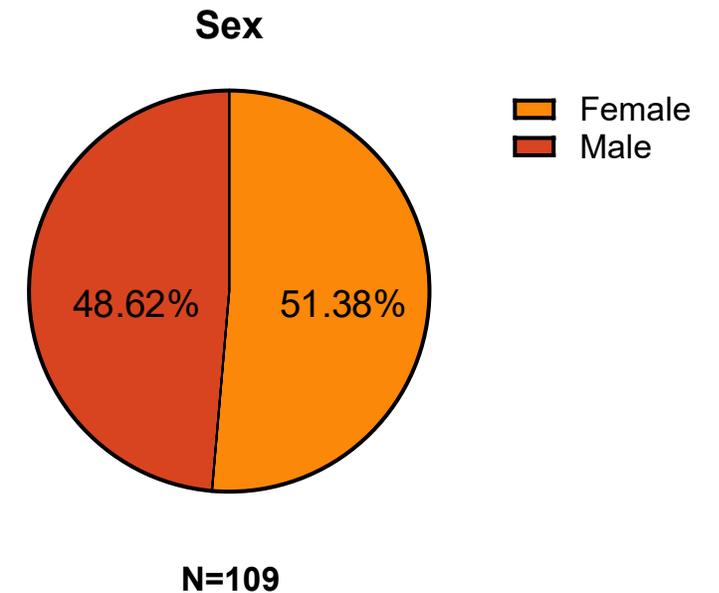
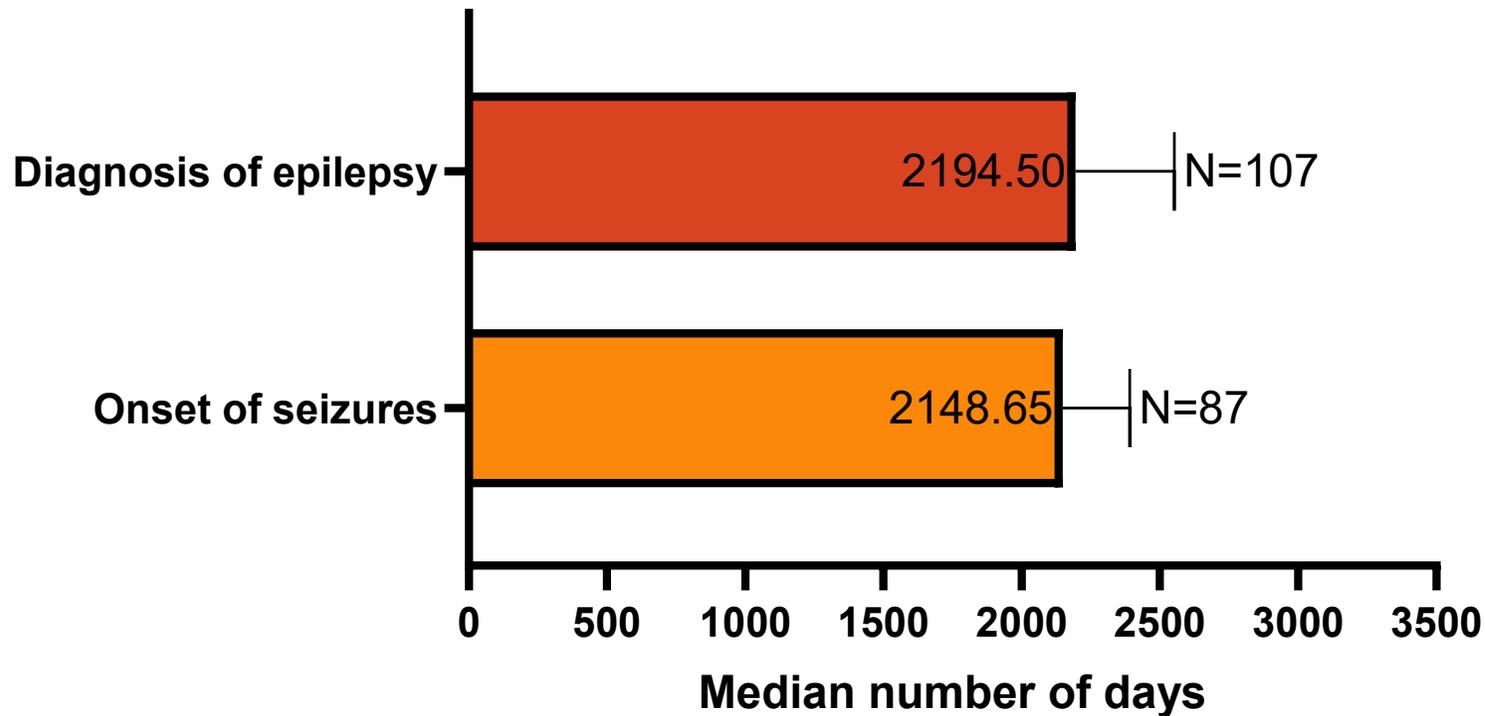
CAE diagnosed - current or past



Total=2014

Results – Demographics

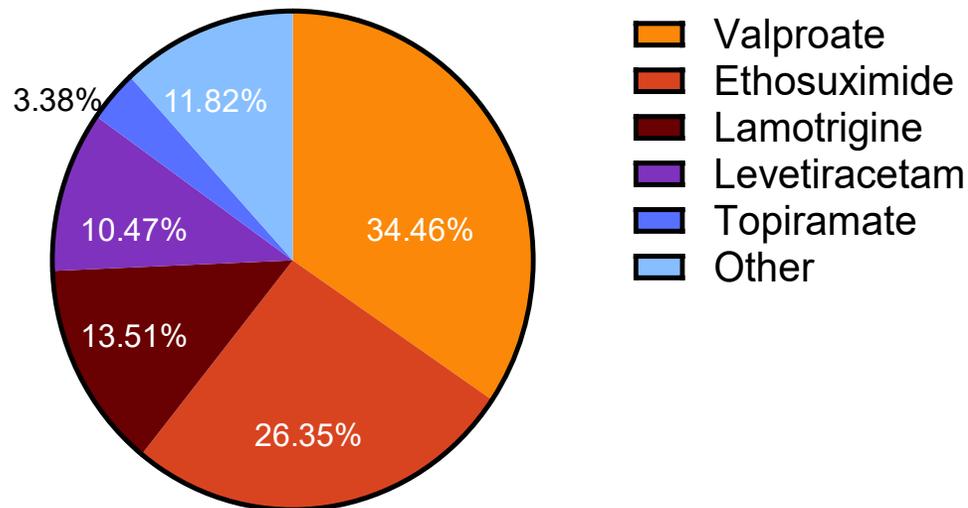
- Median age of onset of seizures: 5 years and 10 months
- Median age of diagnosis of CAE: 6 years



Results – Antiseizure medication (ASM)

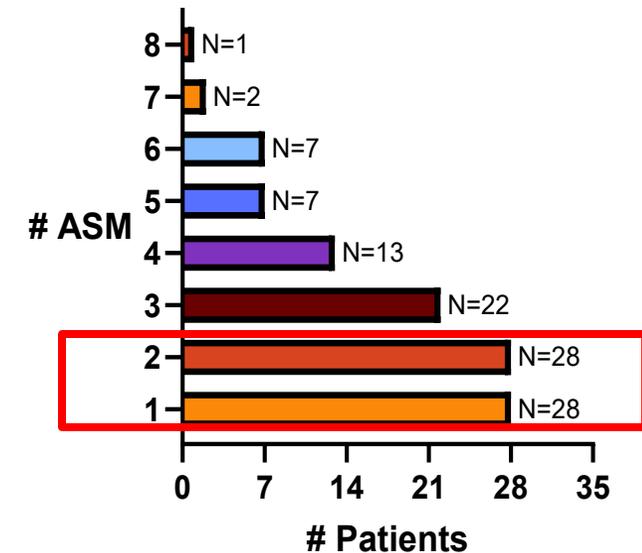
- Guidelines: ethosuximide, valproate and lamotrigine^{7,8}
- 75% in our cohort, Valproate most used
- Average of 3 ASM tried

Antiseizure medication



N=296

Total amount of ASM per patient tried

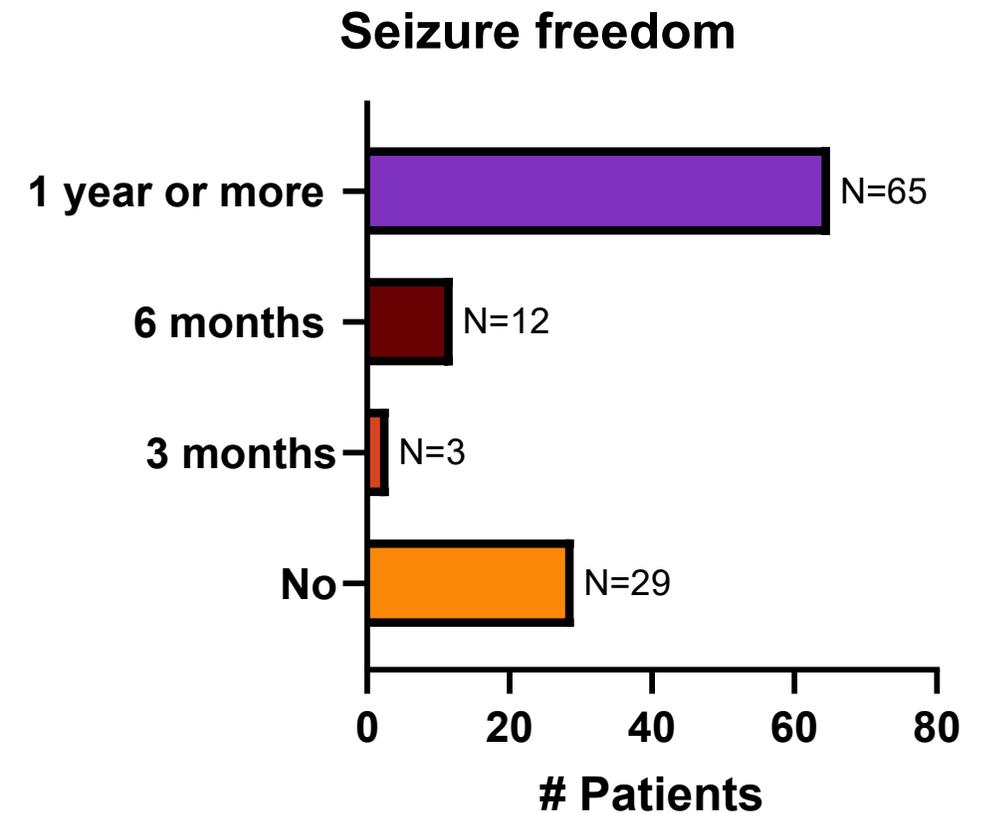


(7) Glauser TA et al. N Engl J Med. 2010.

(8) Glauser TA et al. Epilepsia. 2013.

Results – Seizure freedom (≥ 6 months)

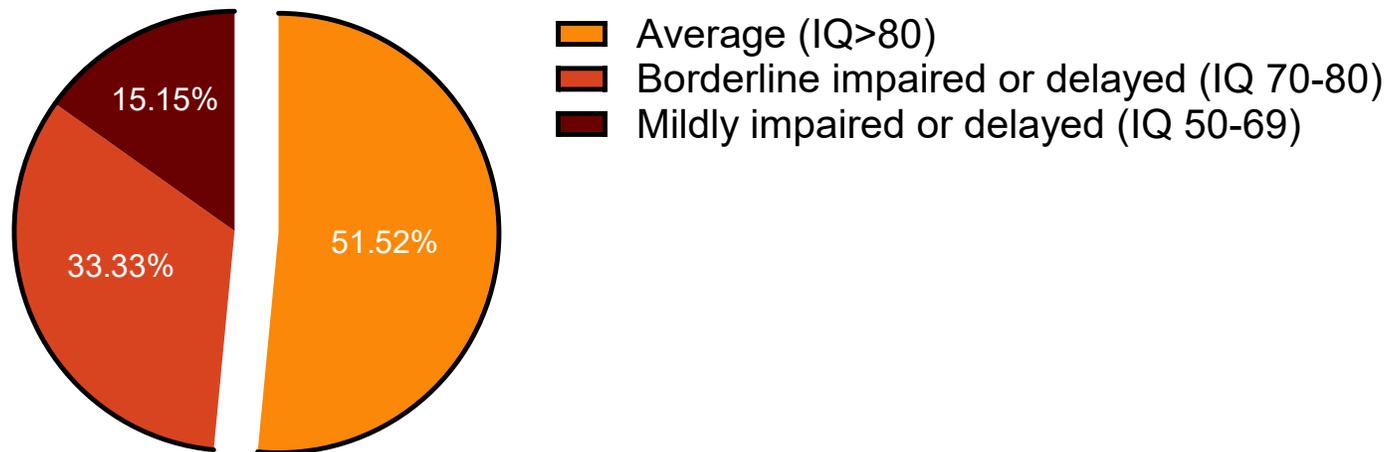
- Seizure freedom: 70.6%
 - Average of 2.4 ASM
- No seizure freedom: 29.4%
 - Average of 3.7 ASM



Results – Intellectual disability

- Test for intellectual level done in 30.3%
- Of those, 48.5% with $IQ \leq 80$

Results intellectual abilities assessment

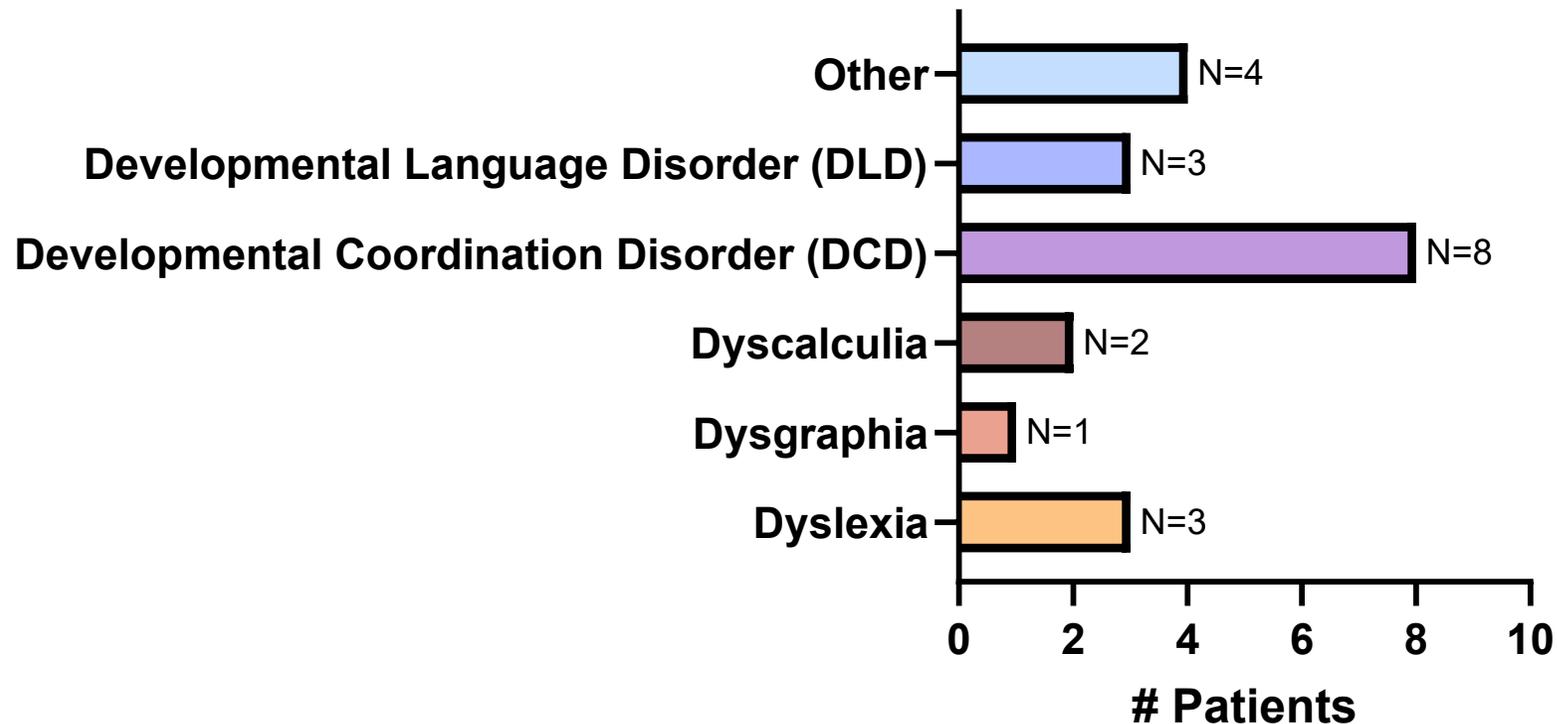


N=33

Results – Learning problems

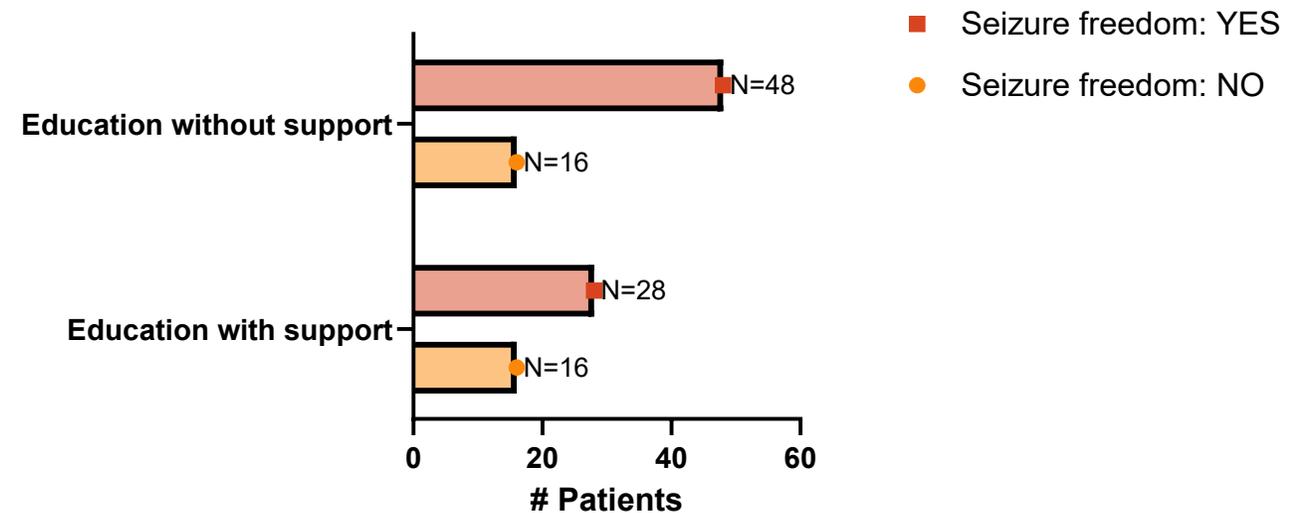
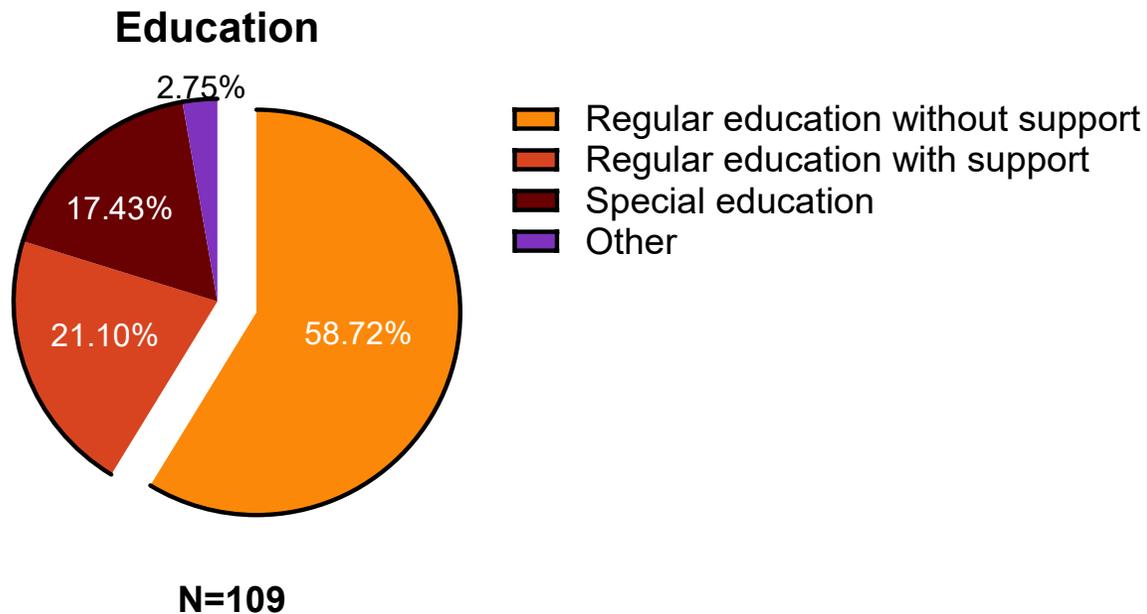
- In 15% formal diagnosis of specific learning problem (N = 109)

Learning problems



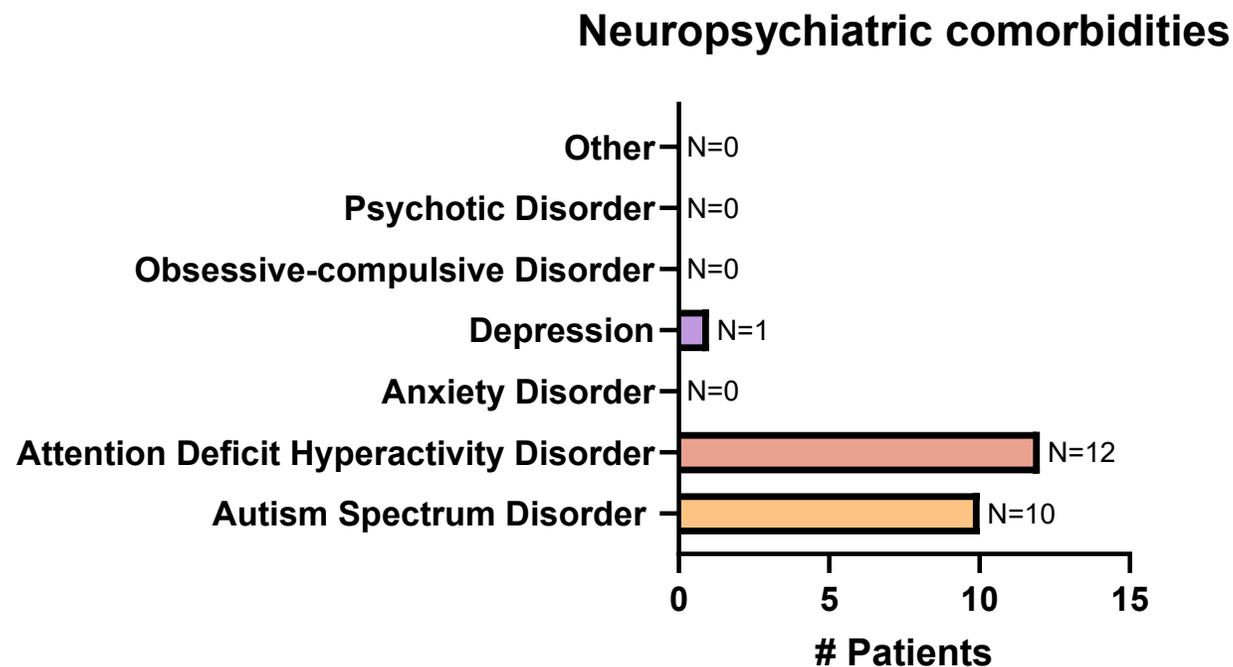
Results – Education

- 40% education with additional support
- Seizure freedom → less likely to need support in education



Results – Neuropsychiatric comorbidities

- 21 out of 109 tested (19.2%)
- 19 patients with neuropsychiatric comorbidity (17.4%)
 - 2 patients both ADHD and ASD



Conclusion and considerations

Conclusion

- Seizure freedom in 70%
- IQ ≤ 80 in 48.5% of tested patients \rightarrow screening needed
- Learning problems in 15%
- Educational support in 40%
- Neuropsychiatric comorbidity in 17.8%

Considerations

- Clinical registry data can help to discover research priorities
- Referral and selection bias: tertiary care centers

Thank you!
Questions?



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Resources

- (1) Killory BD, Bai X, Negishi M et al. Impaired attention and network connectivity in childhood absence epilepsy. *Neuroimage*. 2011 Jun 15;56(4):2209–17.
- (2) Boesen MS, Børresen ML, Christensen SK, et al. School performance and psychiatric comorbidity in childhood absence epilepsy: A Danish cohort study. *Eur J Paediatr Neurol*. 2023 Jan;42:75-81.
- (3) Hirsch E, French J, Scheffer IE, et al. ILAE definition of the Idiopathic Generalized Epilepsy Syndromes: Position statement by the ILAE Task Force on Nosology and Definitions. *Epilepsia* [Internet]. 2022 Jun 1;63(6):1475–99.
- (4) Wirrell EC, Camfield CS, Camfield PR, et al. Long-term psychosocial outcome in typical absence epilepsy. Sometimes a wolf in sheeps' clothing. *Arch Pediatr Adolesc Med*. 1997 Feb;151(2):152-8.
- (5) Abarrategui B, Parejo-Carbonell B, García García ME et al. The cognitive phenotype of idiopathic generalized epilepsy. *Epilepsy Behav*. 2018 Dec;89:99-104.
- (6) Caplan R, Siddarth P, Stahl L, et al. Childhood absence epilepsy: behavioral, cognitive, and linguistic comorbidities. *Epilepsia*. 2008 Nov;49(11):1838-46.
- (7) Glauser TA, Cnaan A, Shinnar S, et al.; Childhood Absence Epilepsy Study Group. Ethosuximide, valproic acid, and lamotrigine in childhood absence epilepsy. *N Engl J Med*. 2010 Mar 4;362(9):790-9.
- (8) Glauser TA, Cnaan A, Shinnar S, et al.; Childhood Absence Epilepsy Study Team. Ethosuximide, valproic acid, and lamotrigine in childhood absence epilepsy: initial monotherapy outcomes at 12 months. *Epilepsia*. 2013 Jan;54(1):141-55.