Effects of antiepileptic therapy in women during pregnancy: a retrospective case-controlled study

Melinda Vanya M.D.[1], Nóra Árva-Nagy M.D.[1], Délia Szok M.D. Ph.D.[2], György Bártfai M.D. Ph.D. D.Sc.[1]

[1]Department of Obstetrics and Gynaecology, Faculty of General Medicine, University of Szeged
[2]Department of Neurology, Faculty of General Medicine, University of Szeged

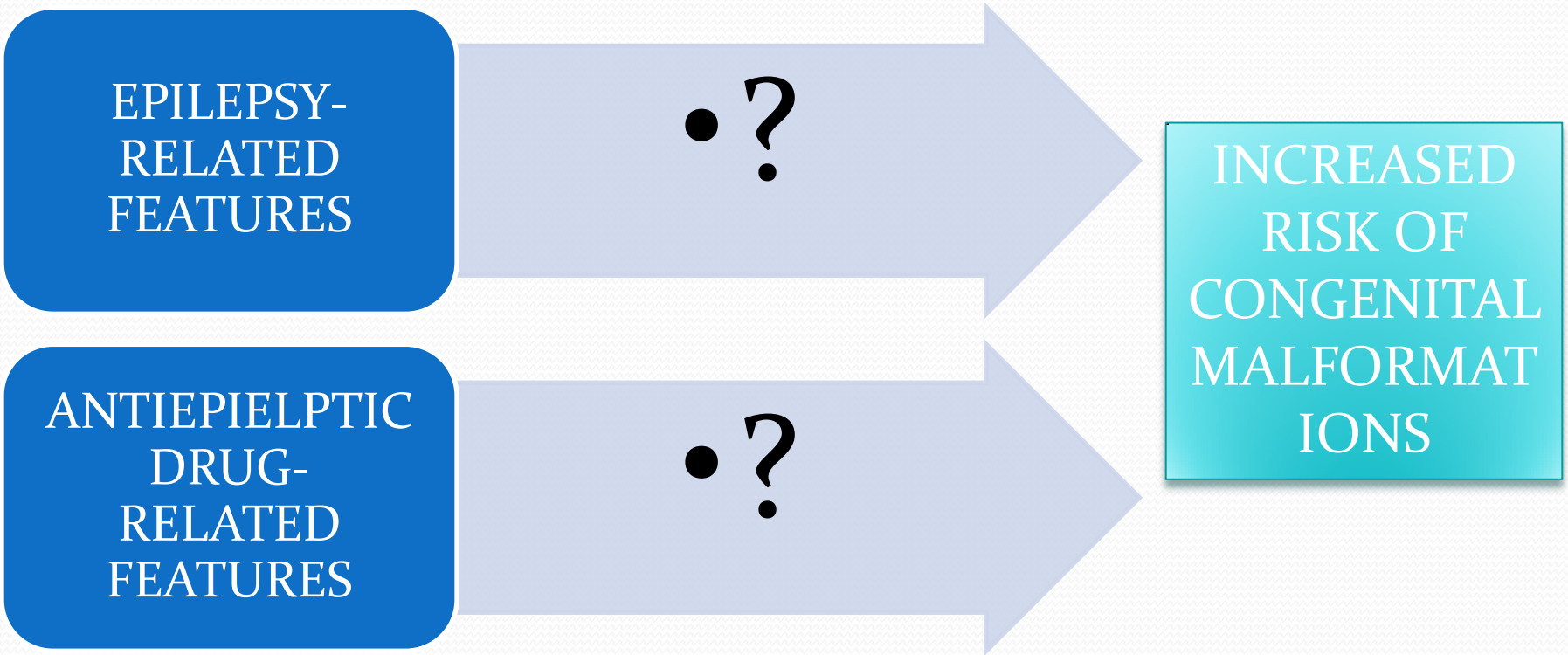
FUNDING STATEMENT
The publication is supported by the European Union and co-funded by the European Social Fund.
Project title: "Broadening the knowledge base and supporting the long term professional sustainability of the Research University Centre of Excellence at the University of Szeged by ensuring the rising generation of excellent scientists."
Project number: TÁMOP-4.2.2/B-10/1-2010-0012

NEW SZÉCHENYI PLAN

HUNGARY'S RENEWAL

The project is supported by the European Union and co-financed by the European Social Fund.

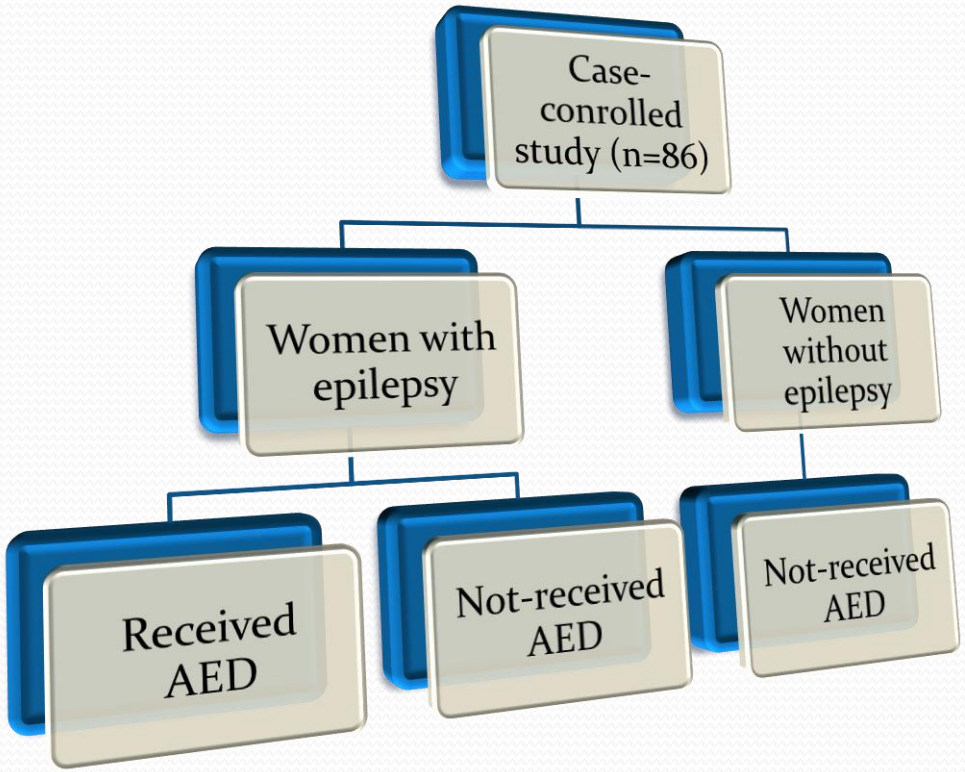
Background


EPILEPSY-RELATED FEATURES
•?
ANTIEPIELPTIC DRUG-RELATED FEATURES
•?
INCREASED RISK OF CONGENITAL MALFORMATIONS

OBJECTIVE

In order to determine the role of antiepileptic drugs (AEDs) and the incidence of maternal, obstetrical, neonatal complications we conducted a retrospective case-controlled study on two cohort of pregnant women: 1) 86 epileptic women treated with AEDs, 2) 86 non-epileptic women treated without AEDs.

Patients and methods



Statistical analysis: chi-square test, Independent sample t-test, Kruskall-Wallis analysis

Relationship of epilepsy syndromes and AED use during pregnancy and congenital malformations

*Type of epilepsy	AED exposure during pregnancy	No. of AED-treated WWE (n=86)	Percentage of all WWE	No. of CMs
SF	Not exposed to AED	15	17.44	0
PG	Valproic acid	14	16.23	4
SF	Lamotrigine	6	6.98	0
PG	Carbamazepine	10	11.63	1
PG	Valproic acid + Lamotrigine	16	18.604	1
PG	Valproic acid + Carbamazepine	11	12.79	1
PG	Lamotrigine + Carbamazepine	8	9.30	0
SF,SG	Lamotrigine + Levetiracetam	6	6.98	0

Abbreviation:

•PG: primary generalized epilepsy, PF: primary focal epilepsy, SG: secondary generalized epilepsy,

•SF: secondary focal epilepsy; WWE: women with epilepsy; AED: antiepileptic drug, CM: congenital malformation

Relationship between valproic acid exposure and detected congenital malformations

	VPA+*	VPA-**	Not exposed to AED	p
Congenital malformations	6	1	0	0.054
Healthy neonates	35	29	15	

*VPA+: valproic acid-containing therapy,
** VPA-: not valproic acid therapy instead lamotrigine, carbamazepine or levetiracetam

Seizure pattern and perinatal outcomes

Comparison of delivery mode and neonatal parameters in the case and control groups					
	Women with epilepsy (n=86)		Women without epilepsy (n=86)		p
	n	%	n	%	
Prematurity (<37 weeks, <2500 g)	12	13.95	9	10.46	N.S.
Intrauterine growth retardation	5	5.81	1	1.16	N.S.
Assisted vaginal delivery	39	45.34	50	58.14	0.026
Caesarean section	40	46.51	33	38.37	N.S.
Miscarriage	6	7	0	0	0.015
Post-term birth	21	24.41	21	24.41	N.S.
Mean gestational age (weeks)	38.5 ± 2.1		38.4 ± 2.2		N.S.

Seizure relapses during pregnancy and the puerperium

	n	%
No changes in seizure pattern	60	69.8
During the 3 rd trimester	23	26.7
During delivery	1	1.2
In the puerperium	2	2.3

Conclusion

- It seems to be that the increase rate of CM is AED drug-related feature.
- We detected significant differences in the rate of miscarriages between the case and the control. Epilepsy has a potential role in patomechanism of miscarriage