

# Uses of antiepileptic drugs among pregnant women with epilepsy in Taiwan, a 15-years cohort study

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## Introduction

- Seizure control is important in pregnant women with epilepsy, but the potential adverse obstetric events associated with antiepileptic drugs (AEDs) have raised significant concern.
- A better understanding regarding uses of AEDs among pregnant women with epilepsy is therefore essential to justify the benefits and risks of its use among this population.
- The aim of this nationwide study was to assess the uses of AEDs in pregnant women with epilepsy in Taiwan from 2004 to 2018.

## Method

- Study Source: Taiwan's NHIRD and the Birth Certificate Registry, 2004-2018
- Study population: pregnant women with epilepsy who received antiepileptic drugs (AEDs) before and during pregnancy.
- First part: AEDs (phenytoin, carbamazepine, oxcarbazepine, valproic acid, lamotrigine, topiramate, levetiracetam and others) used among pregnant women were assessed annually from 2004 to 2018.
- Second part: For each study subject, we assessed their use of AEDs in -360~-270 days, -269~-180 days, -179~-90 days, -89~0 days prior to pregnancy and first-, second-, and third- trimesters to capture the potential time-varying changes of AEDs before and during pregnancy.

## Result

- Among 2,883,260 pregnant women, 21,909 (0.76%) received at least one AEDs prescription 1 year prior to pregnancy or during pregnancy, and 3,194 (14.58%) received AEDs for epilepsy.



- From 2004 to 2018, use of carbamazepine (64.1% to 17.1%), valproic acid (27.6% to 7.6%) and phenytoin (22.4% to 2.9%) among pregnant women decreased while lamotrigine (12.8% to 38.1%), levetiracetam (0% to 47.1%) and oxcarbazepine (3.2% to 20.0%) increased. (Figure 1)
- For AEDs use before and during the pregnancy, we found that approximately 80% of women with epilepsy used AEDs prior to pregnancy. However, the proportion of women who used AEDs declined subsequently in the first- (77%), second- (72%), and third- (68%) trimesters of pregnancy. (Figure 2)

Figure 1. AED utilization of pregnant women with epilepsy from 2004 to 2018

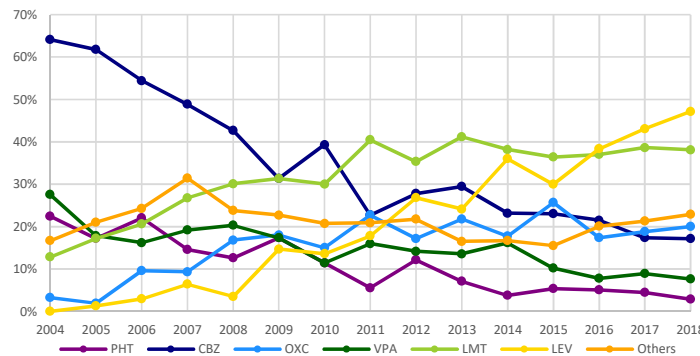
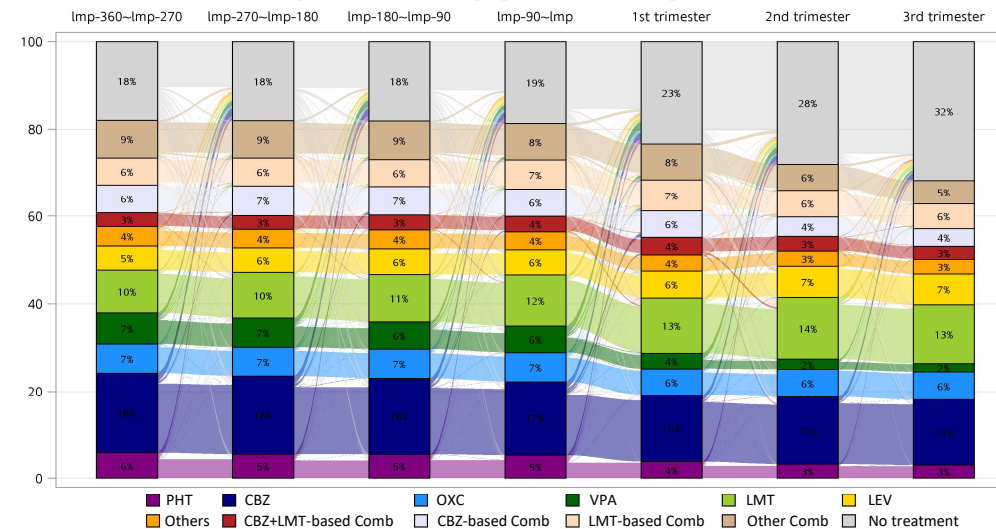


Figure 2. AED utilization of pregnant women with epilepsy before and during pregnancy



## Conclusion

Our study provides "real-world data" of uses of AEDs in pregnant women with epilepsy in Taiwan from 2004 to 2018.

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### Abbreviations:

NHIRD: Taiwan's National Health Insurance Research Database, LMP: last menstrual period, PHT: phenytoin, CBZ: carbamazepine, OXC: oxcarbazepine, VPA: valproic acid, LMT: lamotrigine, LEV: levetiracetam, Others: phenobarbital, primidone, vigabatrin, tiagabine, gabapentin, zonisamide, pregabalin, lacosamide, perampamel, Comb: Combination

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