

## Congenital Malformations in Newborns of Mothers Affected by Epilepsy

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### Abstract

**Aim:** To examine the effects of anti-epileptic drugs (AED) used during pregnancy on the frequency and the type of congenital malformations in newborns.

**Methods:** The study included 96 newborns, born by mothers affected by epilepsy (before the pregnancy). The control group consisted of 96 healthy newborns delivered by mothers.

**Results:** Almost all of the pregnant women used AED (98%) during the pregnancy. Monotherapy (Phenobarbiton) was used in 80% of women and 18% was used polytherapy, respectively. The pregnancy ended vaginal delivery in 54.4% of women, and in 45.5% of women, it is ended by cesarean section. Congenital malformations (palatoshisis and ventricular septal defect–VSD) were observed after births in 3 of newborn by means of detailed clinical and ehosonographic survey. Both pregnant women were on polytherapy (Phenobarbiton and Karbamazepin). Congenital malformations were not observed in the control group of newborns delivered by healthy mothers.

**Conclusion:** The use of AED in the form of monotherapy and avoiding of AED that have the teratogenic effect are recommended during the pregnancy. Mothers with epilepsy are free to continue with the breast feeding their newborns.

**Keywords:** Pregnancy; Anti-epileptic drugs; Congenital malformation

### Introduction

Epilepsy involving at least two unprovoked seizure episodes is the third most prevalent neurological condition affecting the elderly, after stroke and dementia-related diseases [1,2].

The epilepsy incidence has been steadily increasing at an average annual rate of 3.5% in the elderly population over the past 2 decades, while the incidence rates in the pediatric and nonelderly adult population have been decreasing [3].

The elderly population is also prone to multiple comorbid conditions relevant to the etiology of epilepsy, such as stroke, cerebrovascular diseases, central nervous system tumors, and neurodegenerative diseases [4]. It has been estimated that 60% of incident epilepsy cases in the elderly population for which the etiology was identified were associated with cerebrovascular diseases, whereas approximately 20% were related to neurodegenerative diseases [4].

Epileptic seizures during pregnancy increase the risk of complications, status epilepticus, placental bleeding, preterm delivery, perinatal death of mother and child which is why the treatment of pregnant women with epilepsy necessary [5].

Rate of malformations in the normal population is from 2 to 3%, while in women with epilepsy, of 1.25 to 11.5%. Recommendation that during the last month of pregnancy the mother with vitamin K (10 mg daily) for prevention of hemorrhagic disease in a child [3-5].

### Methods

The study included 96 newborns born in the Department of Gynecology and Obstetrics Clinical Center of Serbia in the period from January 2011-December 2014 year, born from mothers who are affected by epilepsy (a pregnancy). The control group consisted of 96 healthy newborns born in the same period of healthy mothers. In all newborns in addition to clinical examination was done sonographic trial. In pregnant women with epilepsy were monitored anti-epileptic drugs that are used during pregnancy. The incidence of anomalies in infants whose mothers had epilepsy compared to other antiepileptic drugs.

### Results

Almost all of the pregnant women used AED (98%) during the pregnancy. Monotherapy (Phenobarbiton) was used in 82% of women and 18% was used polytherapy, respectively (Figure 1). The pregnancy ended vaginal delivery in 54.4% of women, and in 45.5% of women, it is ended by sectio cesarean . Congenital malformations (palatoshisis and ventricular septal defect–VSD) were observed after births in 3 of newborn by means of detailed clinical and ehosonographic survey (Table 2). Both pregnant women were on polytherapy (Phenobarbiton and Karbamazepin) (Figure 1). Congenital malformations were not observed in the control group of newborns delivered by healthy mothers.

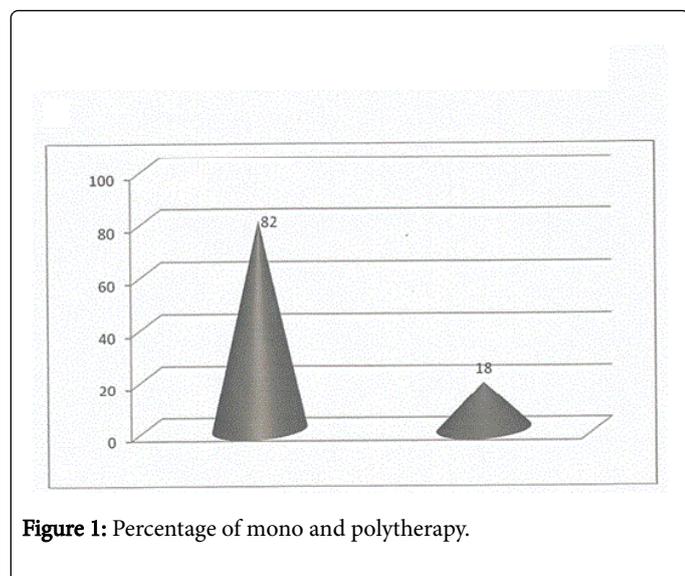


Figure 1: Percentage of mono and polytherapy.

|                                   |   |
|-----------------------------------|---|
| Newborns of mothers with epilepsy | 3 |
| Newborns of healthy mothers       | 0 |

Table 1: Anomalies of newborns.

## Discussion

Most women with epilepsy have a normal course of pregnancy, physiologically normal childbirth, and in 90% of cases born a healthy child [6].

It is important to note that pregnancy should be planned and is in the planning essential education of patients. In the event of planning a pregnancy should be administered antiepileptic at least proven teratogenic properties, and strive to achieve remission with monotherapy [9-12].

It is also necessary, in consultation with a physician before conception begin taking folic acid, to the first weeks of pregnancy reduce the harmful effects of antiepileptic drugs [6,7,8].

Major congenital malformations were defined as cleft lip and/or palate, ventricular or atrial septal defect, other cardiac malformations, and urogenital defects [9].

Regular monitoring of pregnant women with epilepsy by gynecologists and Epilepsy, administering drugs with the least teratogenic, monitor AFP, fetal ultrasonography led to the birth of a healthy newborn [10-12].

## Conclusion

The use of AED in the form of monotherapy and avoiding of AED that have the teratogenic effect are recommended during the

pregnancy. Use of AEDs in monotherapy and to avoid having teratogenic AED effects is recommended during pregnancy. Mothers with epilepsy are free to continue with the breast feeding their newborns [13-15].

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