

# Increased, but low, suicide risk associated with use of anti-epileptic drugs

November 21 2019

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Three of the most common forms of anti-epileptic drugs in Denmark are associated with an increase in patients' risk of suicide. However, the risk is low and should be seen in conjunction with the many beneficial

effects of the medicines. This is the conclusion of a new study carried out by researchers from Aarhus University and Aarhus University Hospital.

In 2017, 180,000 Danes collected a prescription for anti-epileptic drugs which, in addition to being used for treatment of epilepsy, is also used to treat other conditions such as [bipolar disorder](#) and migraine. Researchers from Aarhus University and Aarhus University Hospital have now examined the risk of suicide associated with various forms of anti-epileptic drugs.

The results from the Danish researchers, which have been published in the scientific journal *Annals of Neurology*, support the American [drug](#) administration's warning from 2008 that [suicidal thoughts](#) and behaviour may occur as side effects arising from the use of anti-epileptic medicine.

"The study shows that people who are being treated with anti-epileptic drugs have a slightly increased risk of suicide. This applies to people who take the medicine for epilepsy, but also to those who take it for, for example, migraines or [psychological disorders](#)," explains Postdoc Julie Werenberg Dreier from the National Centre for Register-based Research, Aarhus University, who is behind the study.

## **The risk should be seen in conjunction with the effect**

Utilising the Danish registers, the researchers identified persons with psychiatric disorders in the family or suicidal behaviour prior to the treatment with anti-epileptic drugs. It was previously suspected that the risk of suicide associated with anti-epileptic drugs only appeared among people with a high risk of suicide, that is, people with familial psychological disorders or people who had previously attempted suicide.

"This study shows that the risk of suicide with the use of anti-epileptic

drugs is found both among people that we already know have a particularly high risk, but actually also among people with no previous suicide attempts and psychological disorders, who are basically low risk," says Julie Werenberg Dreier.

The researchers looked at 450,000 Danes who were being treated with anti-epileptic medicine during the period from 1997 to 2016.

"Our study identifies 40-60 suicides per year (in recent years) among people who were being treated with anti-epileptic drugs at the time when they committed suicide. During the same period, there were approximately 600 people in total who committed suicide in Denmark each year," explains Julie Werenberg Dreier.

The drugs phenobarbital, clonazepam and pregabalin are particularly associated with an increased risk of suicide.

## **Contact your general practitioner if you experience suicidal thoughts**

However, in general the extra risk of [suicide](#) is very low, and according to the researchers it is therefore important to emphasise that the risk must always be viewed against the many beneficial effects that the medicine also has, such as reducing and preventing seizures and thus also accidents and death.

"Therefore, our recommendation is that people undergoing treatment with anti-epileptic drugs are particularly aware and contact their doctor if they experience suicidal thoughts," says Jakob Christensen, who has also contributed to the project. He is clinical associate professor at Aarhus University and consultant at the Department of Neurology at Aarhus University Hospital, and has carried out intensive research into

epilepsy over a number of years.

He emphasises that the study ought to be followed up with additional research to examine whether there are differences between the individual types of anti-epileptic medicine.

"Suicide is a rare consequence of treatment with anti-epileptic drugs—but is of course also very serious. So this is why we should react so as to avoid as many cases as possible," says Jakob Christensen, who emphasises that there is a strong need to find anti-epileptic drugs with the lowest possible risk of suicidal behaviour.

**More information:** Julie W. Dreier et al, Antiepileptic Drugs and Suicide: Role of Prior Suicidal Behavior and Parental Psychiatric Disorder, *Annals of Neurology* (2019). [DOI: 10.1002/ana.25623](https://doi.org/10.1002/ana.25623)

Provided by Aarhus University

Citation: Increased, but low, suicide risk associated with use of anti-epileptic drugs (2019, November 21) retrieved 4 May 2024 from <https://medicalxpress.com/news/2019-11-suicide-anti-epileptic-drugs.html>

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