Epilepsy in children: Surgery can eliminate the need for medication

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Around one in every hundred people worldwide is affected by epilepsy, with 40 per cent of them developing the condition before the age of 15. If patients with epileptic fits do not respond to antiepileptic drugs, epilepsy surgery can be used to remove the part of the brain that is responsible for the fits so that the patient can be free of them. Afterwards, the prompt discontinuation of medication is of significant therapeutic interest. Until now, it was not known when the most favourable time was for this without running an increased risk of further fits. Now, an international team of researchers, with collaboration from the MedUni Vienna, has discovered that discontinuing medication even

immediately after the operation represents a promising approach.

At the MedUni Vienna and the Vienna General Hospital, the Epilepsy Centre in the Children's Department, which is run by Martha Feucht and Gudrun Gröppel, was involved in the "Time to Stop" study group. The study has now been published in the highly respected journal *Lancet Neurology*. The study included 766 children and young adults with epilepsy.

The result: "If the epilepsy surgery was one hundred per cent successful, patients no longer need to take antiepileptic drugs. Early and rapid discontinuation of the medication after the operation does not influence the subsequent outcome of the recovery," says Feucht. "On the contrary, early discontinuation 'unmasks' any inadequate surgical results and therefore leads to new diagnostic procedures more quickly." Most centres have so far waited at least two years before even discussing any attempt to discontinue medication.

"This means a major improvement in the quality of life of children affected by the condition, and better chances of post-operative development that is as free from problems as possible," explains the MedUni scientist. "Epilepsy surgery procedures are already being carried out on small children aged just a few months. The younger the patients are, the more important these findings are for them."

Two types of epilepsy suitable for surgical intervention

There are generally two types of epilepsy that are amenable to surgical intervention: symptomatic and cryptogenic epilepsy. The condition is referred to as being symptomatic if there is a known cause (e.g. a tumour or following birth trauma), while the term cryptogenic means "hidden".

In this case, the cause is unclear. There is also a condition known as genetic epilepsy, which is primarily hereditary and which can be treated very effectively with medication.

More information: "Timing of antiepileptic drug withdrawal and long-term seizure outcome after paediatric epilepsy surgery (TimeToStop): a retrospective observational study." *Lancet Neurol* 2012; 11:784-91. dx.doi.org/10.1016/S1474-4422(12)70165-5

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