Seizures in People with Down Syndrome and Alzheimer’s Disease
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We were sent a question about seizures in a person with Down syndrome who developed Alzheimer’s disease. The individual continues to experience seizures despite being treated with levetiracetam (Keppra). We have provided some information below. Please note that this information is for educational purposes only and is not intended to serve as a substitute for a medical, psychiatric, mental health, or behavioral evaluation, diagnosis, or treatment plan by a qualified professional.

- Seizures are more common in all people who develop Alzheimer’s disease – both people with and without Down syndrome – than in people who do not develop Alzheimer’s disease. However, the incidence of seizures as a symptom of Alzheimer’s disease is greater in people with Down syndrome than in people without Down syndrome.

- For people without Down syndrome, the seizures usually occur later in the course of Alzheimer’s disease. For people with Down syndrome, sometimes the seizures are one of the early symptoms.

- Seizure types may range from myoclonic seizures to tonic-clonic (grand mal) seizures. Myoclonic seizures are brief and often involve only one jerking movement of an arm or leg (although they may also involve the trunk). Tonic-clonic seizures include shaking and stiffness, often of the whole body, and are usually associated with falling down and/or a change in consciousness.

- Many different anti-seizure medications can be used successfully to treat seizures associated with Alzheimer’s disease. The type of seizure is one of the factors in the selection of the medication. Side effects and tolerability also contribute to the choice of medication.

- If the seizures are infrequent or mild, we may start at a lower dose of medication to limit side effects. Sedation and increased confusion are potential side effects of most of the seizure medications and lower doses may limit side effects.

- If seizures are frequent and/or severe, we consider starting at a higher dose to (quickly and more definitely) limit the complications of untreated seizures. However, higher doses are often associated with more side effects.

- Infrequent and mild myoclonic jerking is often well-tolerated without treatment and, at times, the side effects of the medications are tolerated less than the myoclonic jerking. However, sometimes the myoclonic jerking can be poorly tolerated. For example, repeated jerking of the arm may make eating difficult or dramatic jerking of the trunk (even if only one infrequent jerk) may cause the individual to fall. Treatment can help with eating difficulty or falling.
• The seizures experienced by some individuals do not respond well to a medication. Increasing the dose to the maximum recommended dose is a first step. Some individuals may not tolerate the maximum recommended dose due to side effects.

• The next step may be adding an additional medication or changing to a different medication. Sometimes adding a new medication followed by weaning the first is a successful approach. Particularly if the seizures are severe, once the seizures are controlled and the medication(s) are being tolerated, a provider may recommend not making further changes (i.e. not weaning off the first medication). Sometimes more than two medications are needed.

• Sometimes a decision must be made to balance side effects with optimal control. In other words, sometimes the side effects or even the severity of the seizures limits the ability to eliminate the seizures completely. An occasional seizure may be unavoidable. However, in most instances, the ability to eliminate the seizures with limited side effects is possible. Although, over time, the seizures may reappear, and medication changes may be needed.

• The providers at the Adult Down Syndrome Center have prescribed a variety of medications including levetiracetam (Keppra), valproic acid (Depakote), lamotrigine (Lamictal), gabapentin (Neurontin), and others.

• Levetiracetam is a newer medication and is often used successfully. It is well tolerated by many. Side effects seen at the Adult Down Syndrome Center include sedation, particularly at higher doses. Many individuals have tolerated levetiracetam by starting at a lower dose and increasing as needed. Conversely, some individuals get agitated on levetiracetam. This may require lowering the dose or changing to a different medication.