Opinion

Myoclonic moments: sleep myoclonis a movement disorder

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Sleep Myoclonis is classified as a "normal" neurological presentation in which involuntary "jerk" like movements occur in the light stages of sleep, primarily stage two. When these Myoclonic jerks occur, the person is wakened by them and tries to fall back asleep. Normally, people do fall into the higher stages of sleep without issue. There are cases, however, where a person has these movements again upon trying to sleep, creating a vicious cycle. Worse, the lack of sleep promotes the movements, and without any treatment the movements grow stronger. A person can stay awake for five days before becoming delusional.

What is most disturbing is that sleep myoclonus is considered an "orphan disease" not unlike African River Blindness. Because less than five percent of the population is affected to a pathological level, pharmaceutical companies do not develop medicines for this rarely pathological disease. In fact, it is often confused for other movement disorders of sleep such as restless leg syndrome (RLS), periodic limb movement disorder (PLMD), or even early onset Parkinson's disease (PD).

RLS and PD are often treated with one or more of the following medications: Levedopa, Mirapex (for early onset), and the Neurpro patch. These medications affect the brain by the dopamine system. That will have no effect for a person suffering from pathological sleep myoclonus, which originates from unusual activity in the brain stem. Other anticonvulsants such as Keppra, Gabapentin (Neurontin), and Lyrica (Pregabalin), are wonderful anticonvulsants to treat disorders that originate from the motor cortex as they are glutamate depleting, the excitatory complementary hormone to the inhibitory neurotransmitter GABA (4-aminobutanoic acid).

GABA-ergic compounds must be introduced to inhibit sleep myoclonus. That is, GABA production must be stimulated within the brain, and more specifically in the brain stem. The only FDA "suggested", not even approved, is a medicine called Clonazepam, (Klonopin), a long acting benzodiazepine. The trouble with benzodiazepines is that they promote chemical dependency in a way that can cause stroke, heart attack, or even death if suddenly withdrawn. They are habituating meaning that it may require higher doses to achieve the same effect. For some people, the benzodiazepines may be addictive. That implies there is a predilection for the drug itself above and beyond any medical necessity. It does not mean, however, that all those who must take this medicine are inclined to do so.

My question for big "pharma" is why not develop an anticonvulsant that can act on the brain stem in a GABA-ergic manner that will not affect other parts of the brain so as not to cause the potentially harmful side effects as mentioned previously? The answer, of course, is money. There are so few people affected to the extent that they cannot sleep for several days due to sleep Myoclonis that it is not worth the time or effor t on their part compared to RLS which affects roughly 10% of the world population. Ten percent seems to be the threshold for big "pharma".

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Conflict of interest

The author declares no conflict of interest.