With high costs and similar benefits, use of new neurology drugs is low
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A number of new neurologic medications for diseases like multiple sclerosis (MS), Parkinson's disease and migraine have received U.S. Food and Drug Administration (FDA) approval over the past decade. However, with most having higher out-of-pocket costs and benefits similar to existing, less expensive drugs, only a small percentage of people with neurologic conditions are being treated with these new drugs, according to a study published in the November 30, 2022, online issue of *Neurology*.

"Our study of people with neurologic conditions found fewer than 20% were being treated with new medications," said study author Brian C. Callaghan, MD, MS, of University of Michigan Health in Ann Arbor and a Fellow of the American Academy of Neurology. "For new, high-cost medications that have similar effectiveness to older drugs, limited use is likely appropriate. However, future studies are needed to look into whether the high costs are barriers to those new medications that can really make a difference for people living with neurologic disease."

For the study, researchers used a private insurance claims database to identify people with 11 neurologic conditions and a prescription for a new or existing drug. The study included 2.3 million people with migraine, 76,990 with MS, 67,917 with Parkinson's disease, 57,259 with orthostatic hypertension, 22,936 with myasthenia gravis, 6,257 with tardive dyskinesia, 4,180 with *amyotrophic lateral sclerosis* (ALS), 2,277 with Huntington's disease, 267 with transthyretin amyloidosis, 163 with Duchenne's disease and 10 people with spinal muscular atrophy.

Researchers then looked at use of new versus existing medications. New medications were defined as drugs that received FDA approval between 2014 and 2018. They included erenumab, fremanezumab and galcanezumab for migraine, ocrelizumab and peginterferon beta-1a for MS, pimavanserin and safinamide for Parkinson's, droxidopa for orthostatic hypertension, eculizumab for myasthenia gravis, edaravone for ALS, deutetrabenazine and valbenazine for both Huntington's and tardive dyskinesia, patisiran and inotersen for transthyretin amyloidosis, eteplirsen and deflazacort for Duchenne's disease and nusinersen for spinal muscular atrophy.

When calculating the proportion of people receiving new medications compared to all medications for each condition, researchers found fewer than 20% of participants were taking new medications for all conditions except tardive dyskinesia, which was 32%.

Researchers also calculated the average out-of-pocket cost for a 30-day supply of each medication. The two most expensive drugs were edaravone for ALS, which was $713 per month, and eculizumab for *myasthenia gravis*, which was $91 per month. Overall, the out-of-pocket and total costs for the new drugs were substantially larger than for the existing drugs. Out-of-pocket costs for new drugs were also highly variable and unpredictable compared to the costs for existing medications.
Callaghan noted that new medications for the rare diseases spinal muscular atrophy and transthyretin amyloidosis have dramatically changed care, allowing stabilization of otherwise progressive and debilitating diseases. He said, "Unfortunately, the small number of people in the study with these conditions did not allow the authors to make conclusions about the effect of cost on use of these game-changing medications."

"We are living in a time when new treatments bring hope to people with neurologic diseases and disorders," said Orly Avitzur, MD, MBA, FAAN, President of the American Academy of Neurology. "However, even existing prescription medication can be expensive and drug prices continue to rise. In order for neurologists to provide people with the highest quality care, it is imperative that new drugs are accessible and affordable to the people who need them."

One limitation of the study is that follow-up time was short for some of the recently approved medications. Another limitation is that the number of people in the study with rare diseases was small.


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