Brand Name Versus Generic?

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Changes in the Use of Brand Name and Generic Medications and Total Prescription Cost Among Medicare Beneficiaries With Epilepsy

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Background and Objective: To characterize trends in antiseizure medication (ASM) fills and total prescription costs in people with epilepsy. Methods: This was a retrospective cohort study of beneficiaries with epilepsy (ASM, plus ICD codes) in a 20% random Medicare sample, with continuous Fee-For-Service coverage (Parts A, B, and D) in 2008–2018. We summed the number of pill days and costs (adjusted to 2018 dollars) per person-year for each ASM. ASMs were categorized into brand versus generic, first versus newer generation, and enzyme inducers versus noninducers. Results: There were 77,000–133,000 beneficiaries with epilepsy per year. The most common ASM was phenytoin in 2008, which shifted to levetiracetam in 2018 (2008: phenytoin 25%, levetiracetam 14%; 2018: phenytoin 9%, levetiracetam 27%). Brand name (2008: 56%; 2018: 14%), first-generation (2008: 55%; 2018: 32%), and enzyme-inducing ASMs (2008: 44%; 2018: 24%) each decreased over time as a proportion of pill days. The number of brand pill days per person-year initially decreased (e.g., 2008: 250; 2009: 121; 2010: 96) but then plateaued (2013–2018: between 66 and 69) given a notable increase in lacosamide pill days per person (2008: 0; 2018: 20). Total brand name costs per year initially decreased 2008–2010 (2008: $150 million; 2010: $72 million) but then increased after 2010 (2018: $256 million). In 2018, brand name ASMs represented 79% of costs despite representing only 14% of pill days, a 1-year pill supply became 277% more expensive for brand name medications but 42% less expensive for generic medications over time (2008: brand ~$2,800 versus generic ~$800; 2018: brand ~$10,700 versus generic ~$460), and many common brand name ASMs cost approximately 10-fold more per pill day than their generic equivalents. Discussion: First-generation and enzyme-inducing ASMs waned from 2008 to 2018. Although brand name ASMs initially waned translating into lower costs and potentially higher value care, after 2010, brand name costs markedly increased because of increasing use of lacosamide plus a 277% increase in per-pill cost of brand name ASMs. Brand name ASMs represented a minority of prescriptions, but the majority of costs.

Commentary

Look at your bank account. Costs are increasing . . . and your balance is shrinking. And if you are a patient living with epilepsy, it's even worse. Let me tell you why.

Costs of epilepsy care in the United States rise every year. The grim reality is that they are outpacing inflation and threatening the sustainability of the federal insurers, Medicaid and Medicare. Medicare Part D has insured about 50 million people in the past few years, and 1.1 million are those with epilepsy.

A recent study reported that from 2010 to 2018, people with epilepsy or seizures averaged US$15,096/person/year in direct health care costs and US$1,400/person/year for prescription drugs.[1] From 2008 to 2018, branded anti-seizure medications (ASMs) costs averaged US$10,700/person/year compared to US$460 for generic drugs.[2] Prior studies showed estimates of ASM costs ranging from 11.4% to 70.8% of total care expenditure for epilepsy, depending on study criteria.[3]

These costs grow over time. For example, the annual spending for epilepsy care rose by 7.6%, and the growth rate for ASM costs was even higher at 8.8%.[1] Terman et al showed that Medicare paid 277% more in 2018 than in 2010 for brand-name ASMs while spending much less for generic ASMs (a 42% drop over the same period).[2] Brand-name ASMs represent 79% of total drug costs while constituting only 14% of prescriptions.[2] While brand-name ASMs prescriptions dropped by 3 quarters in 2018 compared to 10 years before, likely due to the availability of lower priced generic drugs and policy changes, their price hike kept the total spend on branded ASMs over their generic counterparts.

If brand-name ASMs are so expensive, why do we keep using them? Because generic equivalents are not always available. Market exclusivity incentivizes manufacturers to invest in drug development and, by design, reduces competition from generic drug makers. The average market exclusivity period for newly approved drugs is over 12 years. And once a new drug is approved, the Food and Drug Administration (FDA) also guarantees several years forbidding a generic version approval, regardless of the time remaining on the new drug's patent. Once generic versions become available, drug prices typically decline because of competition. The FDA reported generic drugs approval yielding annual savings ranging from US$10.7 to US$24.8 billion in 2018 to 2020.[4]

How much more expensive can it be? Terman et al showed that brand-name ASMs cost approximately 10 times more than their generic counterparts.[2] For example, a 1-year supply of branded and generic levetiracetam was US$6900 and US$540, respectively, and was US$9000 and US$600 for lamotrigine.[2] The average price of a brand-name drug doubled from 2009 to 2018 in the Medicare Part D program, per the Congressional Budget Office.[5] The increase was driven by the price rise of drugs already on the market and newer drugs entering the market with high launch prices. In Medicare Part D, generic market share climbed from 72% in 2009 to 90% in 2016 and has plateaued.[5] This shift keeps the net spending per beneficiary in Medicare Part D in line with the inflation rate. However, if brand-name drug costs double again in the next decade while generic market share remains flat, then net Part D spending will grow.

Are specialty drugs even more expensive? Yes. Specialty drugs are typically biologic and target a specific part of the disease process. In the era of precision medicine, the trend in ASMs development is shifting to creating more specialty drugs than before. On the bright side, these treatments could be life-changing and improve outcomes for patients with epilepsy. However, I'm sad to tell you that specialty drugs are overwhelmingly more expensive than traditional, nonspecialty ones. From a price perspective, they are like brand-name costs on steroids. Because specialty drugs are especially complicated to manufacture and target a smaller patient population, their price is high. And the lack of market competition helps keep it that way.

Do you believe that newer ASMs are better than older ones? The discoveries of ASM have been exponential since the use of animal models for drug screening in 1937 and the booster by the NINDS Anticonvulsant Screening Project in 1975.[6] Newer-generation ASMs are often better tolerated, have more favorable pharmacokinetic profiles, and offer a practical route of administration (ie, intranasal vs rectal) than older drugs. And these advancements can substantially improve the quality of life for people using them. But the disappointing fact is there have not been substantive improvements in therapeutic efficacy, particularly for the medically intractable population. For example, no change in the seizure freedom rate in 1795 patients with newly diagnosed epilepsy followed for 30 years, despite the availability of newer ASMs with various mechanisms of action developed during that time.[7] However, the advances in precision medicine and targeted therapy in epilepsy will challenge this finding. And the long-term treatment outcomes are yet to be seen, and so are the financial consequences.

Are brand-name ASMs better than their generic counterparts? Many patients and prescribers are concerned that generic drugs might not be biologically or therapeutically equivalent to the branded versions and that criteria for the FDA approval of generics are not representative of real-life use. The FDA has received many reports of generic ASMs causing undesirable symptoms. However, the agency could not conclude the causal relationship of the incidence. Privitera et al showed that disparate generic lamotrigine products in patients with epilepsy were bioequivalent without detectable differences in clinical effects, confirming that US FDA bioequivalence standards are appropriate.[8] Besides, a "nocebo effect" may explain why patients report symptoms when using generic drugs. Nocebo effect is when a patient develops symptoms with treatment just because the patient believes they may occur. We commonly see this in randomized controlled trials when patients in the non-treatment arm report side effects.

In the end, I don't discount the benefits of advancements in epilepsy treatment and the opportunity for a higher quality of life they offer. But they come at a steep price. Drug costs will continue to grow aggressively and burden patients and taxpayers supporting the Medicare program. Ultimately, as prescribers, we are responsible for recommending the most appropriate ASM for each patient, considering medical criteria and the patient's societal context-drug access and costs.

Finally, inequity seems obvious if you view drug prices as a proxy for health care access. And this article showcases evidence of a much larger problem in our health care system and calls for changes.

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References

1. Moura L, Karakis I, Zack MM, Tian N, Kobau R, Howard D. Drivers of US health care spending for persons with seizures and/or epilepsies, 2010-2018. *Epilepsia*. 2022;63(8):2144-2154. doi:10.1111/epi.17305
2. Terman SW, Lin CC, Kerr WT, DeLott LB, Callaghan BC, Burke JF. Neurology. Changes in the Use of Brand Name and Generic Medications and Total Prescription Cost Among Medicare

Beneficiaries With Epilepsy 2022;99(8):e751-e761. doi:10.1212/WNL.0000000000200779

3. Begley CE, Durgin TL. The direct cost of epilepsy in the United States: a systematic review of estimates. *Epilepsia*. 2015;56(9):1376-1387. doi:10.1111/epi.13084
4. The U.S. Food & Drug Administration. Generic competition and drug prices. 2022. https://www.fda.gov/about-fda/center-drug-evaluation-and-research-cder/generic-competition-and-drug-prices (accessed 13 January 2023)
5. Congressional Budget Office. Prescription drugs: spending, use, and prices. 2022. https://www.cbo.gov/publication/57050 (accessed 13 January 2023)
6. Rho JM, White HS. Brief history of anti-seizure drug development. *Epilepsia Open*. 2018;3(suppl 2):114-119. doi:10.1002/epi4.12268
7. Chen Z, Brodie MJ, Liew D, Kwan P. Treatment outcomes in patients with newly diagnosed epilepsy treated with established and new antiepileptic drugs: a 30-year longitudinal cohort study. *JAMA Neurol*. 2018;75(3):279-286. doi:10.1001/jamaneurol.2017.3949
8. Privitera MD, Welty TE, Gidal BE, et al. Generic-to-generic lamotrigine switches in people with epilepsy: the randomised controlled EQUIGEN trial. *Lancet Neurol*. 2016;15(4):365-372. doi:10.1016/S1474-4422(16)00014-4