



Time to Start Calling Things by Their Own Names? The Case for Antiseizure Medicines

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Abstract

Medicines currently used in the management of epilepsy have been developed to suppress seizures, and they have no known impact on the underlying disease. Using the term “antiepileptic” to describe these compounds is misleading because it suggests an action on the epilepsy itself. Pharmacological agents that have a merely symptomatic effect should be referred to as anti-seizure medicines. Using appropriate terminology is especially important at a time innovative treatments targeting the development of epilepsy and its comorbidities are being actively pursued.

Keywords

antiseizure medicines, antiepileptic drugs, epilepsy, terminology

If names be not correct, language is not in accordance with the truth of things. If language be not in accordance with the truth of things, affairs cannot be carried on to success.

Confucius (551-479 BC)

That’s not a lie, it’s a terminological inexactitude.

Alexander Haig

yielded 156 499 hits, compared to a paltry 383 hits for “anti-seizure drugs.” The time has come to adopt a more transparent language to define the medicines that we use. In this article, we review the pros and cons for abandoning the term “antiepileptic drugs,” and for referring consistently to “antiseizure medicines (ASMs)” when dealing with drugs intended to have a symptomatic effect.

Introduction

It is time to change the name of medicines used to treat seizures. The medicines currently used are effective in aborting or preventing seizures through a merely symptomatic effect, that is, they have no known impact on the disease process in patients at risk of developing epilepsy or in those who have epilepsy, yet the current name is “antiepileptic drugs (AEDs).”¹⁻³ Referring to these medicines as “antiepileptic” rather than “antiseizure” misrepresents what these compounds actually do. Yet, the term “antiepileptic drugs (AEDs)” is pervasive in the medical literature. A PubMed search conducted on November 10, 2019, using the term “antiepileptic drugs”

Four Good Reasons for Using the Term “ASMs” When Referring to Symptomatic Medicines

Names of medicines are best defined by their effects. The medicines currently used to treat epilepsy are symptomatic. Just as antitussives treat cough in people who may have many underlying illnesses, medications used to treat people with epilepsy treat the symptom of seizure. It would be inaccurate to call antitussives “antibronchitis” treatments. It is equally as inaccurate to call a medication “antiepileptic” if it has no ability to treat the underlying causes of epilepsy. Indeed, “antiepileptic” is suggestive of an action for which these agents were not



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developed either clinically or preclinically.¹⁻⁴ Because the ability of currently used medicines to prevent or abort seizures has been clearly demonstrated,⁵ the term “ASMs” reflects precisely those effects. Other terms which are sometimes used when referring to ASMs are likewise less than desirable. “Anticonvulsants” may be appropriate when referring to the action of these medicines against convulsions in animal models of seizures,⁶ but it is improper when referring to them collectively because not all seizures are convulsive and because some ASMs (eg, ethosuximide) are not effective against convulsions.⁷

International issues. Some have argued that the term “anti-seizure,” while useful in English-speaking regions, would be problematic for regions where there is no name for “seizure.” This should not be considered a barrier. In some cultural settings, medicines used to treat persons with epilepsy are named in ways that bear no semantic relationship with either “epilepsy” or “seizures.” In several Latin languages, for example, these medications are at times referred to as “anticomiciales” (Spanish),⁸ “anticomitiaux” (French),⁹ or “anticomiziali” (Italian),¹⁰ which are considered by some as advantageous because they may minimize potential stigma associated with the name of the disease or its manifestations. However, the origin of these terms is actually even more stigmatizing because it can be traced back to a peculiar rule that was in place in ancient Rome. Then, when someone had a seizure during comitia, that is, an assembly of the people, the assembly had to be dispersed because the occurrence of the seizure was considered an ominous sign.¹¹ Irrespective of their origin, these terms are problematic in that they fail to reflect transparently the actual effect of the medicines.

Misleading names may facilitate inappropriate use. Long-term prophylaxis with drugs that have no antiepileptic effect but carry the name “AED” is still applied inappropriately in several settings. For example, a single-center study in Canada found that over 25% of patients who had no history of seizures and had been operated for malignant glioma were prescribed these medications inappropriately beyond the first perioperative week.¹² Other studies documented a wide variation across centers in prophylactic use in children with severe traumatic brain injury.¹³ There could be many reasons for inappropriate use of these medications as prophylaxis, but it cannot be excluded that at least in some cases such use is motivated by the misconception that epilepsy can be prevented. Admittedly, a name change to highlight the fact that these medicines are solely symptomatic will not by itself solve the problem of inappropriate use, but it would contribute to a better understanding of what these medicines do.


Renaming these medications as “antiseizure medications” will undoubtedly improve communication with patients. Changing the name to “antiseizure medication” will allow a necessary conversation between prescriber and patient, that a symptomatic treatment will only be effective when taken at regular intervals. This simple principle is not universally understood. In some low-income settings, in particular, where people may not have access to adequate medical supervision,

achieving control of seizures after starting ASM treatment can be misinterpreted as evidence that their epilepsy has been cured and that treatment is no longer necessary. The concept of prolonged drug regimens being needed to control rather than to cure a condition is difficult to understand in these settings and can be a major determinant of nonadherence.¹⁴

New classes of medications which target the underlying disease are being developed. Over the last decade, major advances in elucidating the mechanisms involved in epileptogenesis have led to identification of a wide range of attractive targets for preventing epilepsy or modifying its course.¹⁵⁻¹⁸ In parallel with those achievements, progress has been made in the discovery of biomarkers that can be used to identify patients at high risk of developing epilepsy.^{18,19,20} Thanks to these advances, it is becoming increasingly feasible to conduct clinical trials of potential disease modifying treatments,¹⁹ including treatments aimed at preventing epilepsy and/or its comorbidities in individuals exposed to epileptogenic conditions, such as traumatic brain injury,²¹ stroke,²² and certain genetic disorders.^{17,23,24} As these treatments are being developed and, hopefully made available for broad clinical use, it is essential that adequate terminology is developed to differentiate them from treatments that are purely symptomatic. We believe that this is probably the strongest argument for introducing transparent language that describes the intended effects not only of the medicines in current use but also of those entering clinical trials for indications other than seizure suppression.

Are There Any Good Reasons to Retaining the Term “AEDs” When Referring to Symptomatic Medicines?

The term “antiepileptic” is too well established to be changed. Although we appreciate that many people feel bound to tradition, the fact that incorrect terminology is highly prevalent is no justification for perpetuating it. In fact, it is natural for language to evolve and to reflect improved awareness of underlying concepts and implications. An excellent example of how a concerted action of health professionals and lay organizations can impact on the use of specific terms is the change of the name used to indicate epilepsy in Korea. The traditional name of epilepsy used in some East Asian countries includes “madness” and other pejorative connotations in its meaning, with highly stigmatizing consequences.²⁵ Thanks to a remarkable initiative spurred by the Korean Epilepsy Society, the stigmatized name of epilepsy was legally abolished by the Korean National Assembly in 2011 and substituted with a neutral and scientific term with the meaning of “cerebroelectric disorder.” A very similar effort initiated in Hong Kong led to a change in the name of epilepsy in Chinese.²⁶ Of course, introducing a new term by legal decree or by recommendation of a scientific society cannot lead its immediate use by everyone but requires gradual adoption, as shown by a recent Korean survey.²⁷ Similarly, we cannot



expect that the term “ASMs” to describe currently used medicines will become universally used overnight. Yet, it is encouraging that use of this term is steadily increasing in the medical literature. Of 383 articles identified by the search term “antiseizure drugs” in PubMed, only 31 were published before 2000, compared to 55 in 2019 alone.

There are other therapeutic areas where symptomatic medications are defined by the disease. The use of terminology that does not reflect precisely the action of medicines is not limited to epilepsy. Medicines used to treat the symptoms of Parkinson disease or migraine, for example, are typically referred to as “antiparkinsonian” or “antimigraine” drugs even though they are not known to affect the course of the underlying disease. The fact that nontransparent terminology is used in other therapeutic areas is no justification for perpetuating use of the same terminology, particularly for disorders like epilepsy for which, as discussed above, disease-modifying medicines are already entering clinical trials.

Unlike “antiepileptic,” “antiseizure” cannot be translated effectively in many languages. As noted above, one issue that is brought up by some colleagues is the difficulty of translating “antiseizure” in some languages. In Latin languages, in particular, the name used to indicate a seizure has the same meaning as “crisis” (as used, eg, in referring to an economic or political crisis), and an “anticrisis” medicine could resonate oddly in the mind of people. In fact, new terms may sound odd when used initially, but will no longer be perceived as such as their use become established. In any case, as discussed earlier for the name of “epilepsy” in Korean and Chinese, each community/culture should ultimately decide what is the best terminology to express a given concept in their language. We are not advocating for a literal translation on the term “seizure” in all languages, but simply arguing that in English language the term “ASM” is the most appropriate to designate medicines that act solely against seizures.

Conclusions

It has been suggested that one of the reasons the medicines introduced in the last 30 years had only a very modest impact on pharmaco-resistant epilepsy is that drug development has been always focused on targeting the symptoms (seizures), and real progress cannot be expected unless and until we develop drugs that specifically target the underlying disease.^{18,28} In fact, an impressive effort is ongoing in industry and academia to develop truly innovative treatments which are not “antiseizure” but aim at preventing the development and progression of epilepsy and/or its comorbidities. A natural consequence of this paradigm shift is that new terms must be introduced to describe compounds that have “antiepileptogenic” or, in a broader sense, “disease modifying” effects. Not surprisingly, this scenario has also highlighted that the adjective “antiepileptic,” which suggests an effect on the underlying disease, should be abandoned and substituted by “antiseizure” when referring to treatments that are merely symptomatic. The International League against Epilepsy has acknowledged the

importance of this issue and appointed an ad hoc task force to produce recommendations on appropriate terminology to be applied when describing medicines that differentially affect the symptoms and/or the underlying disease.

In the present article, we reviewed the arguments for or against the use of the term “ASMs.” For the reasons explained above, we feel strongly that “ASMs” is the most appropriate term when referring to treatments that specifically target the primary symptom of epilepsy, that is, the seizures. We consider that “ASMs” is preferable to “ASDs” (antiseizure drugs) because the acronym ASD is widely established to indicate autism spectrum disorder. We are aware that adoption of new terms is a gradual process, and we are pleased that use of the term “antiseizure” when referring to currently used drugs is increasing rapidly in the medical literature. We are grateful to *Epilepsy Currents* for giving us the opportunity to elaborate on this important issue. To paraphrase Confucius’s statement, the beginning of wisdom is to call things by their proper name.

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