sive status epilepticus treated with placebo indicating that respiratory problems are an important consequence of untreated convulsive status epilepticus (Level A). When both are available, fosphenytoin is preferred over phenytoin based on tolerability but phenytoin is an acceptable alternative (Level A). In adults, compared to the first therapy, the second therapy is less effective while the third therapy is substantially less effective (Level A). In children, the second therapy appears less effective and there are no data about third therapy efficacy (Level C). The evidence was synthesized into a treatment algorithm. CONCLUSIONS: Despite the paucity of well-designed randomized controlled trials, practical conclusions and an integrated treatment algorithm for the treatment of convulsive status epilepticus across the age spectrum (infants through adults) can be constructed. Multicenter, multinational efforts are needed to design, conduct and analyze additional randomized controlled trials that can answer the many outstanding clinically relevant questions identified in this guideline.

Background

Traditionally, brief seizures are defined as lasting less than 5 minutes, while prolonged seizures last between 5 and 30 minutes; status epilepticus is defined as more than 30 minutes of either 1) continuous seizure activity or 2) two or more sequential seizures without full recovery of consciousness between seizures (1). The 30-minute definition is based on the duration of convulsive status epilepticus that may lead to permanent neuronal injury by itself (2). Since the majority of seizures are brief, and once a seizure lasts more than 5 minutes it is likely to be prolonged (3), status treatment protocols have used a 5-minute definition to minimize both the risk of seizures reaching 30 minutes and the adverse outcomes associated with needlessly intervening on brief, self-limited seizures (2, 4). This guideline follows this convention and, for purposes of treatment, uses the term status epilepticus to represent studies involving both prolonged seizures and traditionally defined status epilepticus.

Status epilepticus presents in several forms: 1) convulsive status epilepticus consisting of repeated generalized tonic–clonic (GTC) seizures with persistent postictal depression of neurologic function between seizures; 2) nonconvulsive status epilepticus where seizures produce a continuous or fluctuating "epileptic twilight" state; and 3) repeated partial seizures manifested as focal motor signs, focal sensory symptoms, or focal impairment of function (e.g., aphasia) not associated with altered awareness (epilepsia partialis continua).

Between 50,000 and 150,000 Americans each year have status epilepticus (5–7), with mortality estimated at less than 3% in children but up to 30% in adults (5, 6, 8). The goal of therapy is the rapid termination of both clinical and electrical seizure activity, since appropriate and timely therapy of status epilepticus reduces the associated mortality and morbidity (9). Ultimately, the prognosis is most strongly related to the etiology, duration of status epilepticus, and the age of the patient (10–12). Basic critical care and emergency principles of therapy such as supporting respiration, maintaining blood pressure, gaining intravenous (IV) access, and identifying and treating the underlying cause have achieved widespread acceptance and are routinely implemented by both neurologists and non-neurologists. Despite this recognition of the need to address status epilepticus as a critical care emergency, the goals of therapy and approaches to the pharmacologic treatment of status epilepticus continue to vary dramatically. Unfortunately, patients still receive inadequate treatment for a variety of reasons including, but not limited to, therapy aimed at reduction instead of termination of seizures, use of inefficient therapies such as sedatives and paralytics, and administration of insufficient anticonvulsant doses.

In 1993, the Epilepsy Foundation of America asked its professional advisory board to convene a working group of experts to develop a treatment protocol and related educational materials depicting the best current medical management of convulsive status epilepticus. The subsequent consensus guideline provided physicians with a consistent, rational approach (2). Over the past 2 decades, new medical therapies and new clinical trial data have emerged relating directly to the treatment of this most feared type of seizure activity. Coupled with the acceptance of evidence-based rather than consensus-based guidelines, the Epilepsy Foundation in 2004 and the American Epilepsy Society in 2012 began the process of reevaluating the existing medical literature and developing a new guideline. This writing team started their activity on behalf of the Epilepsy Foundation and completed their task with the support of the American Epilepsy Society.

Purpose of This Guideline and Definition of Terms

The goal of this current guideline is to provide evidence-based answers to efficacy, safety, and tolerability questions regarding the treatment of convulsive status epilepticus and to synthesize these answers into a treatment algorithm. This guideline focuses on convulsive status epilepticus because it is both the most common type of status epilepticus and is associated with substantial morbidity and mortality. Anticonvulsant "efficacy" is the ability of the drug to stop convulsive status epilepticus, "tolerability" involves the "incidence, severity and impact" of anticonvulsant related adverse effects (13, 14), "effectiveness" encompasses both anticonvulsant efficacy and tolerability, and "safety" refers to life-threatening adverse events.

The guideline's recommendations aim to help clinicians worldwide understand the relevant existing evidence for treatment of patients with status epilepticus. The guideline is intended for use by individual clinicians, hospitals, health authorities, and providers. We recognize that this guideline