



The effects of antiepileptic medications on the social skills of individuals with mental retardation

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Abstract

Prevalence rates of epilepsy are much higher among persons with developmental disabilities compared to the general population. Anticonvulsant medication is the most common method of treating seizure disorders. Many of these antiepileptic medications (AEDs) are associated with various side effects, which may have detrimental effects on the social skills of those with developmental disabilities. The present study investigated the effects of AEDs on the social skills of individuals with mental retardation (MR) residing in an institutional facility. The social skills of 130 individuals were assessed by the Matson Evaluation of Social Skills for Individuals with sEvere Retardation (MESSIER). Sixty-five of these individuals were diagnosed with a seizure disorder and received only one AED at the time of this study. These individuals were taking one of three AEDs (carbamazepine, valproic acid, or phenytoin). Participants belonging to one of these three medication groups were matched with residents for age, gender, level of MR and race, who did not have seizures or receive AEDs. MESSIER scores of each medication group were compared to its respective control group. Those individuals receiving phenytoin presented less positive social skills than their matched counterparts in the phenytoin-control group.

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1. Introduction

Prevalence rates of epilepsy are considerably higher among individuals with mental retardation and developmental disabilities (MR/DD) than individuals in the general population (Wilfong, 2002). Rates vary from 30% for persons with mild MR to greater than 50% for those with severe to profound MR (Kanner, 2002; Mattson, 1996). Considering the frequency of seizure disorders, many researchers have begun to focus their attention on the treatment of epilepsy in the MR population.

There are three main methods of treating epilepsy: surgical treatment, behavioral treatment, and the use of antiepileptic medications (AEDs). Of the three, antiepileptic medications (anticonvulsants) are the most common and most effective method of treatment (Mycek, Harvey, & Champe, 1997). Though there are several new AEDs, many individuals with MR continue to be treated with the classic AEDs such as phenobarbital, phenytoin, carbamazepine, and valproic acid. These classic medications are generally effective in controlling seizures, however their effectiveness is typically accompanied by adverse side effects and drug reactions (Matson & Mayville, 2000; Pellock, 2002).

Reported AED side effects include volatile behavior, impaired cognition, reduced motor skills, and sedation (Cole, 2002; Rutecki & Gidal, 2002). Matson, Mayville, and Bamberg (2001) compared the side-effect profiles of individuals with MR receiving AEDs, to matched controls. The between group analysis indicated that those individuals taking AEDs endorsed symptoms of slurred speech, disturbed gait, toothaches, and menstrual changes significantly more than those not taking AEDs. Prominent factors in the presence of side effects included medication dosage level and polypharmacy. Recent guidelines impress the importance of striving for monopharmacy, while acknowledging that polypharmacy must be used with some individuals (Deb & Joyce, 1999; Kerr, 2002).

There are a variety of AEDs available which differ in treatment efficacy specific to seizure type, drug interaction properties, and side-effect profiles. Three commonly used AEDs include: phenytoin (Dilantin), carbamazepine (Tegretol), and valproic acid (Depakote/Depakene). Each of these medications are often used among individuals with MR.

1.1. Phenytoin (Dilantin)

Phenytoin, introduced in the late 1930s, was the first major anticonvulsant to be effective at a dosage level that did not impose significant sedating effects. It is used primarily for the treatment of partial and generalized seizures (Pellock, 2002). Matson and Mayville (2000) described the side effects of phenytoin as numerous, wide-ranging, and likely to present special problems to individuals with mental and physical complications. *The Practitioner's Guide to Psychoactive Drugs for Children and Adolescents* (2nd ed.; Vining, Carpenter, & Aman, 1999) indicated possible cognitive effects as impaired attention and visuomotor functioning, as well as poor performance on problem solving tasks. In addition,

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