

Most antiepileptic drug overdoses are deliberate

Victoria Stern

The most common cause of nonbenzodiazepine antiepileptic drug intoxications is deliberate self-poisoning, according to a study published online April 2 in *Epilepsia*.

This is the first study to explore risk factors for nonbenzodiazepine antiepileptic (NBAED) intoxication in Iran, Dr. Hossein Hassanian-Moghaddam from Shahid Beheshti University in Iran told Reuters Health in an email.

NBAEDs, also called benzodiazepine-like drugs, are a class of antiepileptic (AED) medications. Dr. Hassanian-Moghaddam estimates that about 1% of the total population uses AEDs to treat epilepsy. AEDs are also prescribed as mood stabilizer in psychiatric conditions and other diseases.

AEDs depress central nervous system function, which means overdosing may be life threatening or lead to adverse outcomes. A 2004 study estimated that AEDs are responsible for 3.2% of all cases of poisonings in adults over 19 years of age and are the seventh leading cause of poisoning-related fatalities in the United States [p.1, col 2]. However, the epidemiology of AED intoxication in developing countries, such as Iran, has not yet been well established.

Dr. Hassanian-Moghaddam and his colleagues from Shahid Beheshti University conducted a cross-sectional study in the 6-month period from May 22 to November 21, 2003 to determine the risk factors for AED intoxication in Iran. The team included 9,809 cases of AED overdose in individuals over 12 years of age who presented to the Loghman-Hakim Poison Hospital in Tehran, Iran.

Controls included subjects poisoned by benzodiazepines alone and study cases included all patients poisoned by NBAEDs or a combination of NBAEDs and benzodiazepines. The risk factors for AED intoxication were identified using univariate analyses and multivariate modeling.

In the patient population, 275 took only NBAEDs, 199 received a mixture of NBAEDs and benzodiazepines, and the remaining 9,335 took benzodiazepines only.

Overall, 95.3% of patients intentionally overdosed on AEDs. Deliberate self-poisoning occurred significantly more frequently in the pure NBAED group (98.9%) than in the control group (87%, $P<0.001$). Patients with NBAED intoxication versus other poison cases exhibited lower levels of consciousness at the time of hospital admission ($P<0.001$), and were twice as likely to require hospitalization compared to other patients (62.2% vs. 34.7%, $P<0.001$). The number of deaths due to intoxication was not significant between groups ($P=0.42$).

The multivariate analysis revealed that a history of psychological events, previous medical disorders and loneliness were significantly associated with AED intoxication, whereas higher educational level protected against AED poisoning. There was no association between previous history of parasuicide, sex, age, occupation status, and AED intoxication.

"Because higher education level has a protective effect, raising awareness of the potential detrimental effects of AEDs may reduce the incidence of deliberate self-poisoning, said Dr. Hassanian-Moghaddam. "The next step of our work is to test the efficacy of different educational interventions for subsequent suicidal behavior versus the usual treatment."

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