A Case of Catatonia Secondary to Polysubstance Abuse and Acetaminophen Overdose

To the Editor: Emergency departments have a high turnover of patients with substance abuse and/or dependence problems.[1] Compared to the general population, this group has increased risk of suicidal ideation and attempts.[2] We present a case of catatonia in the context of polysubstance abuse and acetaminophen overdose.

Case report. Mr A, a 41-year-old white man, was brought to the emergency department for medical evaluation in 2007. Earlier during the day, he was noticed "staring" outside a school. Police were called and they found him staring blankly, mute, and "very slow."

In the emergency department, he was lying on bed and staring at the ceiling. Vital signs were stable. He was mute and did not respond to questions or follow any commands. He had mildly dilated pupils, and sluggishly reacted to light. Resistance and rigidity on passive movements and hyperreflexia were noted. When the side rail dropped accidentally, he leaned over the side of bed in a slow motion and then returned back to lying position. Complete blood cell count, comprehensive metabolic panel, chest x-ray, and electrocardiogram revealed no abnormalities. Drug screen was positive for cannabis and cocaine. Computed tomography of the head revealed no abnormalities normal. Creatine kinase was 340 U/L.

The patient's identity was established from his driver's license, and his family was contacted. His history was significant for polysubstance dependence (cocaine, intravenous methamphetamine, cannabis, and alcohol) and multiple suicide attempts. He was hepatitis C positive, but had stopped treatment a year ago. Given the history of overdose, testing for serum acetaminophen level was requested; the level was found to be 213 μmol/L. He was treated with *N*-acetylcysteine and supportive measures. He continued to be in a catatonic state for the next 24 hours. Electroencephalogram showed diffuse slow waves but no epileptiform activity.

Catatonic signs started resolving after 36–48 hours, and he admitted to acetaminophen overdose following relapse of drug abuse. Liver enzymes peaked at an aspartate aminotransferase level of 7,170 U/L and an alanine aminotransferase level of 7,903 U/L. The transplant center was contacted, but he was considered a poor candidate given history of hepatitis C, polysubstance dependence, and multiple suicide attempts. Fortunately, liver function tests started to show improvement and the patient recovered without any complications.

Catatonia is characterized by motor and behavioral signs. *DSM-IV-TR* lists motor immobility, excessive purposeless motor activity, extreme negativism or mutism, peculiarities of voluntary movements, echolalia, and/or echopraxia as the signs of catatonia.[3] Catatonic features are classified at 3 places in *DSM-IV-TR*: (1) as secondary to general medical condition, (2) as a subtype of schizophrenia, and (3) as a specifier for mood disorder.

Catatonic syndrome is seen in multiple conditions including infectious, metabolic, autoimmune, neurologic, psychiatric, and substance use disorders as well as with endocrinopathies. Neurotransmitters, especially dopamine, γ-aminobutyric acid and glutamate, are involved in the pathogenesis of catatonic signs. Substance intoxication/withdrawal is a well-known cause of catatonia, but the acetaminophen overdose, which was almost overlooked, could have been fatal.

Incidence of catatonia is difficult to estimate as many cases are unrecognized and difficult to differentiate from delirium, encephalopathy, and postictal state. The above case illustrates the importance of recognizing catatonia, undertaking a comprehensive history and physical examination, and judicial use of investigations to complete assessment and formulate a management plan. Supportive care and precautions to prevent medical complications such as deep venous thrombosis and aspiration pneumonia are vital. Intravenous and/or intramuscular lorazepam, intravenous divalproate, carbamazepine, topiramate, and electroconvulsive therapy have been used in prolonged catatonia.[4]

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Potential conflicts of interest: Dr Padala has been on the speakers or advisory boards for Forest. Dr Bestha reports no potential conflict of interest relevant to the subject of this letter.
Funding/support: None reported.
Published online: February 18, 2010 (doi:10.4088/PCC.09l00790ecr).
Prim Care Companion J Clin Psychiatry 2010;12(1):e1