MINIMALLY-RESPONSIVE HEAD INJURY SURVIVORS MAY HAVE CHRONIC CATATONIA REVERSED YEARS AFTER AN ACCIDENT

Dear Sir,

Could some traumatic brain injury survivors who are minimally responsive for months or years actually have chronic catatonia? Catatonia is characterised by immobility, anorexia and mutism, sometimes coupled with muscle rigidity, bizarre posturing described as waxy flexibility, and echolalia.[1] Catatonia is best known as a form of schizophrenia but can result from many different organic causes, including closed head injury, brain tumours and various infectious and metabolic aetiologies.[2-6] Catatonic patients can literally "awaken" within minutes to hours after a single dose of a parenteral benzodiazepine such as lorazepam or diazepam, and then may need a maintenance dose to prevent a relapse.[1] Those who do not respond to a benzodiazepine often respond to electroconvulsive therapy (ECT), either as a monotherapy or in combination with benzodiazepines.[7] The sedative-hypnotic drug, zolpidem; the anti-seizure drugs, valproic acid and topiramate; and the anti-dementia drug, memantine, have also been used successfully for reversing refractory catatonia, if benzodiazepines and ECT are ineffective.[8-11] It is theorised that for both psychogenic and organic catatonia, benzodiazepines, zolpidem and ECT activate gamma-aminobutyric acid (GABA) receptors on spiny neurons in the striatum of the basal ganglia to somehow unlock catatonic patients, while the other drugs might also act through receptors for GABA or alternatively, dopamine, glutamate or serotonin.[12,13]

Given these available treatments, I believe it is worth considering that some, and perhaps many minimally-responsive head injury survivors might be revived through medications or ECT. As a pilot study, I conducted case findings using a computerised search of newspaper archives, and found news stories from 1990, describing a 45-year-old American who was mute and minimally responsive for eight years following a closed head injury, until he was given intravenous diazepam for a dental procedure. He promptly aroused, recognised his family, started talking again and was able to do complicated mathematical calculations. Several hours later, he relapsed but continued to respond to subsequent doses of benzodiazepines.[14] The patient and his family requested anonymity, and his name was never published. The man's recovery was considered a mystery at that time, and to the best of my knowledge, this patient had never been reported in the medical literature. My newspaper case findings also located recent accounts in South Africa and the United States of traumatic brain injury survivors who were unexpectedly awakened with oral zolpidem years after the precipitating accidents, with further details subsequently appearing in medical journals.[15-17] Finally, in further searches of the published medical literature, I found a man in a persistent catatonic state following a closed head injury and was cured with ECT seven months after the accident.[18]

Without further delay, there should be large, well-powered clinical trials systematically administering benzodiazepines and zolpidem to vegetative head injury survivors, with nonresponders then given valproic acid, topiramate, memantine, and finally ECT. Methylphenidate could also be part of the protocol, as there was a case report of a comatose woman who sustained a subdural haematoma and was awakened one month later with methylphenidate given through a feeding tube. Methylphenidate and other amphetamines have long been used to enhance rehabilitation of head injury patients with deficits short of coma and catatonia.[19,20] The study population could also include patients with anoxic rather than traumatic brain injury, as zolpidem has been shown to awaken these patients long after the initial injury, similar to the miraculous recoveries of survivors of closed head injury.[17,21,22] Even before clinical trials are completed, many families of head injury victims may want their physicians to try medication challenges and ECT. If so, risks and benefits should be fully disclosed, and informed consent obtained in writing. The ultimate hope is that the devastating impact of head injury sometimes can be ameliorated, and this idea is respectfully put forward here for the attention of physicians, nurses, therapists and the public worldwide.

Yours sincerely,

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