Is chlorpromazine safe?

I am concerned about a recommended treatment for serotonin syndrome in "Did Internet-purchased diet pills cause serotonin syndrome?" (Current Psychiatry, July 2008, p. 67-78) by Drs. Kyoung Bin Im and Jess G. Fiedorowicz. The authors suggest administering the antipsychotic chlorpromazine and cite a case by Gillman[1] supporting this indication.

This seems like a particularly risky option because of the overlap in symptomatology between neuroleptic malignant syndrome (NMS) and serotonin syndrome as described by the authors and the fact that administering an additional antipsychotic to a patient with NMS could be fatal. Further, most reports indicate that serotonin syndrome typically is self-limited and best treated with supportive measures and withdrawal of 5-HT active compounds.

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Reference

1. Gillman PK. Serotonin syndrome treated with chlorpromazine. *J Clin Psychopharmacol* 1997;17(2):128-9.

Drs. Fiedorowicz and Im respond

In 1997, Gillman reported a case of a woman with serotonin syndrome whose condition did not improve with supportive management, cyproheptadine, and propranolol. The patient improved 2 hours after receiving intramuscular chlorpromazine, 50 mg. Chlorpromazine was selected because of its antagonism at both 5-HT1A and 5-HT2A receptors, nearly equipotent to cyproheptadine.[1] In 1999 Gillman reviewed case reports for the treatment of serotonin syndrome with chlorpromazine vs cyproheptadine and concluded these 5-HT2 antagonists may be required as a lifesaving measure.[2] Since then chlorpromazine has been suggested as part of serotonin syndrome treatment.[3,4] High doses of chlorpromazine and cyproheptadine have been shown to reduce death in animal models of serotonin syndrome, an effect mediated by 5-HT2A antagonism.[5]

We briefly mentioned chlorpromazine as a medical management option for serotonin syndrome, though we did not recommend it in the case presented. We stated that antipsychotics are contraindicated in NMS and in Table 2 (p. 77) illustrated a common treatment strategy that included avoiding antipsychotics.

We share the writer's concern and hope to reinforce this point. When diagnosis of NMS or serotonin syndrome is unclear, it is advisable to avoid antipsychotics such as chlorpromazine or serotonergic medications such as bromocriptine.

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5. Nisijima K, Yoshino T, Yui K, Katoh S. Potent serotonin (5-HT)(2A) receptor antagonists completely prevent the development of hyperthermia in an animal model of the 5-HT syndrome. *Brain Res* 2001;890(1):23-31.

Self-deception and changing roles

Another way of thinking about self-deception as noted by Dr. Henry Nasrallah in his editorial "Self-deception: A double-edged trait," (From the Editor, Current Psychiatry, July 2008, p. 14-16) relates to the psychology of personal constructs. Dr. George Kelly, a psychologist at Ohio State University, stated that each of us has several selves—child to our parents, parent to our children, mate, friend, citizen, professional, etc.—and it is important to keep it all straight and be the appropriate self in various settings. In *Behavior in Public Places*, sociologist Dr. Erving Goffman noted that nobody changes behavior more rapidly than a waiter—out in the dining room obsequiously fawning over the diner, and then in a few steps through the doors in the kitchen fighting for his food. Goffman asks, which is the real waiter?

It makes sense that there is not one self to deceive but many, and to be a highly functional person one must keep the cast of characters straight.

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