



Poison HOTLINE

1-800-222-1222

October 2024



Did you know

There are many OTC and prescription medications which can cause anticholinergic toxicity. Common exposures include diphenhydramine, doxylamine, and other antihistamines found in allergy and cough & cold medications.

In recent years, intentional diphenhydramine abuse, referred to the “Benadryl Challenge” on social media, has led to many patients abusing these products for potential hallucinogenic effects. They are often unaware of the other anticholinergic symptoms which can be life-threatening.

Patients may also develop anticholinergic toxicity from exposure to several plants. Jimson Weed (*Datura stramonium*) is commonly cited as a plant with anticholinergic properties.

Call **1-800-222-1222** for treatment recommendations related to these or any agents.

Can We Use Rivastigmine Instead?

Physostigmine is a reversible cholinesterase inhibitor used in the setting of anticholinergic toxicity. Patients who are anticholinergic will often present with many hallmark symptoms including delirium, hyperthermia, dry mucous membranes, urinary retention, flushing, mydriasis, and tachycardia. While benzodiazepines can also be used to manage these patients' symptoms, true anticholinergic toxicity can be effectively reversed with physostigmine.

The sole manufacturer of physostigmine abruptly closed in early 2023 and the existing US supply was subsequently depleted. The FDA has allowed temporary importation of physostigmine from Germany¹. However, physostigmine isn't the only reversible cholinesterase inhibitor on the market. Rivastigmine is currently FDA approved to treat Alzheimer's, dementia, and Parkinson's. Its production hasn't declined and comes in both patch and tablet formulations. This raises the question: can we use rivastigmine instead?

While rivastigmine is not FDA approved for anticholinergic toxicity, it has been effectively used to treat these patients. Patients have been treated with both the patch formulation and the tablet formulation, though there isn't necessarily a consensus guideline for dosage and administration. If there is a situation in which a provider is considering using rivastigmine, it is strongly recommended to discuss with an Iowa Poison Control Center medical toxicologist to ensure safe and appropriate administration.

Administration of either rivastigmine or physostigmine is not without its own potential for toxicity, however. If administered or dosed incorrectly, patients can develop symptoms of the cholinergic toxidrome. These symptoms include diaphoresis, salivation, urinary and fecal incontinence, bradycardia, bronchorrhea, vomiting, and bronchospasm. The key, as with many medications, is start low and go slow. Also be mindful of the potential prolonged duration of action of the exposure and potential for redevelopment of anticholinergic symptoms once the acetylcholinesterase inhibitor wears off.

You can call the Iowa Poison Control Center 24/7 to speak one of our specially trained nurses or pharmacists or consult with one of our medical toxicologists.

*Grant Houselog, PharmD, CSPI
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¹<https://www.fda.gov/media/173483/download?attachment>



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Questions:

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