CASE REPORT

Neuropsychiatric side effects of cyclobenzaprine

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david.shprecher@hsc.utah.edu**SUMMARY**

Cyclobenzaprine is commonly used as a muscle relaxant and analgesic. Given its tricyclic properties, serotonin syndrome is a potential side effect of this drug. We report an unusual case of a patient who experienced symptoms of delirium and hyperkinetic movement disorders shortly after initiating treatment with cyclobenzaprine and oxycodone. Symptoms resolved within 48 h of discontinuing cyclobenzaprine. This case serves to remind clinicians to monitor for serotonin syndrome when initiating cyclobenzaprine, and when adding opiate or antidepressant medications to the regimen.

BACKGROUND

Cyclobenzaprine is a centrally acting muscle relaxant widely used for muscle stiffness and pain. Structurally similar to tricyclic antidepressants, it is believed to exert its analgesic effect by interfering with serotonin transmission at the spinal cord. While generally well-tolerated, episodes of cyclobenzaprine-associated psychosis, myoclonus or dystonia have been documented.^{1–4} This case raises concern that these symptoms, which resemble serotonin syndrome, may be more likely to occur when cyclobenzaprine is combined with opioid analgesics or antidepressant medications.

CASE PRESENTATION

A 55-year-old Caucasian man without personal or family history of central nervous system disorders was hospitalised for discitis, successfully treated with eripenem and daptomycin. At the time of discharge, cyclobenzaprine 10 mg three times per day was added to a regimen of long- and short-acting oxycodone for pain. Within 24 h, he developed psychosis, axial and limb myoclonus, and involuntary repetitive twisting postures of the right upper extremity. All symptoms resolved within 48 h after discontinuation of cyclobenzaprine.

DIFFERENTIAL DIAGNOSIS

Differential diagnosis included sepsis, delirium due to metabolic or endocrine disturbances, a psychogenic disorder, drug–drug interactions or drug-induced neuropsychiatric symptoms. The temporal relationship between symptom onset and cyclobenzaprine exposure, with resolution upon discontinuation, suggests a direct side effect of the drug.

OUTCOME AND FOLLOW-UP

Neurological examination, performed at the time of the first consultation 2 months later, was normal. There has been no recurrence of symptoms since the offending medication was withdrawn.

DISCUSSION

Previous reports of myoclonus, serotonin excess and psychosis with cyclobenzaprine have been published.^{1–6} Opioid analgesics, including oxycodone, when given in combination with serotonergic acting drugs, may synergistically cause symptoms of serotonin excess. Other potential explanations include sepsis, metabolic or endocrine disturbances or a psychogenic disorder. The temporal relationship between symptom onset and cyclobenzaprine exposure, with resolution upon discontinuation, suggests a direct association with cyclobenzaprine toxicity.

Learning points

- ▶ Cyclobenzaprine, presumably due to its tricyclic antidepressant properties, can cause symptoms of serotonin excess including psychosis, myoclonus and dystonia.
- ▶ All patients naïve to cyclobenzaprine should be warned and monitored initially for symptoms of serotonin excess.
- ▶ Careful monitoring for serotonin syndrome should take place when adding additional analgesic or antidepressant medications to the regimen.

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REFERENCES

- 1 Reuss R, Reuter I, Jauss M, et al. Torticollis under cyclobenzaprine. *Pharmacology* 2009;84:91–2.
- 2 Linden CH, Mitchiner JC, Lindzon RD, et al. Cyclobenzaprine overdose. *J Toxicol Clin Toxicol* 1983;20:281–8.
- 3 O'Neil BA, Knudson GA, Bhaskara SM. First episode psychosis following cyclobenzaprine use. *Can J Psychiatry* 2000;45:763–4.
- 4 Beeber AR, Manning JM Jr. Psychosis following cyclobenzaprine use. *J Clin Psychiatry* 1983;44:151–2.
- 5 Gillman PK. Is there sufficient evidence to suggest cyclobenzaprine might be implicated in causing serotonin toxicity? *Am J Emerg Med* 2009;27:509–10; author reply 10.
- 6 Spiller HA, Winter ML, Mann KV, et al. Five-year multicenter retrospective review of cyclobenzaprine toxicity. *J Emerg Med* 1995;13:781–5.

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