Fludrocortisone in Posttraumatic Stress Disorder: Effective for Symptoms and Prazosin-Induced Hypotension

To the Editor: Posttraumatic stress disorder (PTSD) treated with prazosin is associated with hypotension. We report 2 cases wherein fludrocortisone was effective in treating prazosin-induced hypotension. Fludrocortisone may have improved symptoms of PTSD. Both patients were admitted in early 2014 to the co-occurring inpatient unit at Sheppard Pratt Health System, Baltimore, Maryland.

Case report 1. Ms A is a 56-year-old woman diagnosed with major depressive disorder (MDD) and PTSD (*DSM-5* criteria). She was sexually abused as a child and physically abused as an adult by her husband. Oral prazosin was started at 1 mg at bedtime and gradually increased to 4 mg 3 times/d. Ms A experienced symptoms of orthostatic hypotension. Her baseline blood pressure was 132/80 mm Hg after starting prazosin and remained consistently low; her lowest level was 90/60 mm Hg. Fludrocortisone was started at 0.1 mg every morning to elevate her blood pressure. Symptoms of orthostatic hypotension resolved despite increasing the prazosin dose. At discharge, Ms A had a blood pressure of 120/70 mm Hg and no PTSD symptoms.

Case report 2. Ms B is a 22-year-old woman diagnosed with obsessive-compulsive disorder, MDD, and PTSD (*DSM-5* criteria). She was sexually and physically abused throughout adolescence and adulthood. Oral prazosin was started at 1 mg twice/d and was gradually increased to 5 mg 3 times/d at discharge. Ms B's baseline blood pressure was 130/78 mm Hg. After starting prazosin, she experienced several episodes of hypotension; her lowest blood pressure level was 88/56 mm Hg. Fludrocortisone was started at 0.1 mg every morning, which normalized her blood pressure at 122/86 mm Hg. The PTSD symptoms showed consistent improvement.

The most common adverse effect of prazosin is dizziness (10%).[1] Fludrocortisone was effective in treating prazosin-induced hypotension in both of our patients. Fludrocortisone is the most effective first-line treatment for orthostatic hypotension.[2] Fludrocortisone has mineralocorticoid properties and increases intravascular volume via increased renal sodium reabsorption, thus affecting electrolyte balance.[2] Alternatively, sodium chloride (table salt) tablets 1–2 g 1–2 times/d may be used to treat prazosin-induced hypotension (Erica Duncan, MD, 2014, written communication).

Fludrocortisone may also have been effective in improving PTSD symptoms[3] concurrently with prazosin.[1,4] Patients with PTSD showed heightened responsiveness of glucocorticoid receptors, and cortisol may decrease the impact of trauma-related thoughts by inhibiting retrieval of memories.[3] Initial observation in combat veterans showed decreased levels of cortisol and increased traumatic recollection of events; administration of intravenous hydrocortisone improved declarative memory. This improvement was attributed to normalization of glucose metabolism in the hippocampus and amygdala.[3]

Short-term management with fludrocortisone is convenient due to a short half-life and variable dosage interval. Dosing is 0.1 mg orally per/d and titrated up by 0.1 mg every 10 days, with a maximum of 0.4 mg.[5] Due to its glucocorticoid effects, long-term use is not recommended. Fludrocortisone is preferred over other blood pressure–elevating medications, including midodrine and pyridostigmine, because the latter 2 require higher doses to achieve the same efficacy, with adverse effects presenting in short-term use.[5,6]

Certain patient populations may have chronically low baseline blood pressure levels, such as young women and those suffering from eating disorders. Therefore, fludrocortisone may be started first to elevate blood pressure, and, then, prazosin may be added subsequently. This novel treatment of prazosin and fludrocortisone provides a therapeutic strategy that is safe, tolerable, and effective. To our knowledge, this is the first case series on the effectiveness of fludrocortisone to treat PTSD symptoms and prazosin-induced hypotension. This therapeutic strategy should be considered in the management of PTSD, as it may lead to better outcomes.

REFERENCES

1. Koola MM, Varghese SP, Fawcett JA. High-dose prazosin for the treatment of posttraumatic stress disorder. *Ther Adv Psychopharmacol*. 2014;4(1):43–47.
2. Hussain RM, McIntosh SJ, Lawson J, et al. Fludrocortisone in the treatment of hypotensive disorders in the elderly. *Heart*. 1996;76(6):507–509.
3. Yehuda R, Golier J. Is there a rationale for cortisol-based treatments for PTSD? *Expert Rev Neurother*. 2009;9(8):1113–1115.
4. Qazi H, Wijegunaratne H, Savajiyani R, et al. Naltrexone and prazosin combination for posttraumatic stress disorder and alcohol use disorder. *Prim Care Companion CNS Disord* 2014;16(4):doi:10.4088/PCC.14l01638 .
5. Figueroa JJ, Basford JR, Low PA. Preventing and treating orthostatic hypotension: as easy as A, B, C. *Cleve Clin J Med*. 2010;77(5):298–306.
6. Robertson D, Davis TL. Recent advances in the treatment of orthostatic hypotension. *Neurology*. 1995;45(suppl 5):S26–S32.

Mansi Vaishnav, BS
mvaish1@gmail.com
Vanessa Patel, BS
Sajoy P. Varghese, MD
Jeffrey C. McCagh, PharmD
Maju Mathew Koola, MD, DPM

Author affiliations: Doctor of Medicine Program, American University of Antigua, Antigua (Ms Vaishnav); Doctor of Medicine Program, Medical University of the Americas, Nevis (Ms Patel); Captain James A. Lovell Federal Health Care Center, Rosalind Franklin University of Medicine and Science, Department of Psychiatry and Behavioral Sciences, Chicago, Illinois (Dr Varghese); Sheppard Pratt Health System, Baltimore, Maryland (Drs McCagh); and Clinical Research Program, Sheppard Pratt Health System and Department of Psychiatry, University of Maryland School of Medicine, Baltimore (Dr Koola).

Author contributions: Ms Vaishnav wrote the first draft of the manuscript under the mentorship of Dr Koola. All authors did the literature search, made intellectual contributions, and reviewed, edited, and approved the final manuscript.
Potential conflicts of interest: None reported.
Funding/support: None reported.
Acknowledgments: Mss Vaishnav and Patel thank Sheppard Pratt Health System and Dr Koola, the attending psychiatrist.
Published online: December 4, 2014.
Prim Care Companion CNS Disord 2014;16(6):doi:10.4088/PCC.14l01676