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Sleep Medicine

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Letter to the Editor

Antibiotic therapy may improve idiopathic restless legs syndrome: Prospective, open-label pilot study of rifaximin, a non-systemic antibiotic

To the Editor:

Restless legs syndrome (RLS) is a compelling urge to move the legs that is associated with discomfort; relieved by motion; and is worse during rest and in the evening or night [1]. It has recently been associated with small intestinal bacterial overgrowth (SIBO) [2]. Rifaximin is a gut-selective, nonsystemic (<0.4% absorption) antibiotic [3] that improves SIBO symptoms [4] and SIBO-associated conditions [5]. This pilot study evaluated the efficacy of rifaximin for treating idiopathic RLS.

Twenty-one patients with RLS were screened for SIBO, as determined by an abnormal lactulose breath test result. Fourteen patients (mean age, 54.3 ± 16.5 years) had SIBO and received rifaximin 1200 mg/day for 10 days followed by 400 mg every other day for 20 days. On days 0, 12, 20, and 30, the international RLS (IRLS) questionnaire was administered. On days 12, 20, and 30, global improvements of RLS and gastrointestinal symptoms were assessed.

At baseline, patients' mean IRLS scores were 23.1 ± 6.2 and patients reported having symptoms of RLS for an average of 6.8 ± 7.5 years. Eleven patients had gastrointestinal disorders (irritable bowel syndrome [$n = 6$], functional pain/bloating [$n = 3$], Crohn's disease [$n = 1$], and celiac disease [$n = 1$]).

Nine patients responded to rifaximin therapy, reporting a global improvement in RLS symptoms. Mean percentage improvement in IRLS scale scores was 65.6% in responders versus -5.7% in nonresponders. Two nonresponders who received additional antibiotics experienced improvement in RLS. The nonresponder patient with celiac disease improved with a gluten-free diet.

Rifaximin is a novel therapy that may improve RLS associated with SIBO. Inflammation associated with SIBO may affect iron uptake and transportation by stimulating hepcidin production, which

may have an impact on RLS. A double-blind trial is underway to evaluate a higher dose of rifaximin (1650 mg/day) for patients with RLS and SIBO.

Financial disclosure

Dr. Weinstock is on the Salix Pharmaceuticals Speaker's Bureau; MedThink Communications provided editorial assistance under the direction of the author with support from Salix Pharmaceuticals, Inc.

References

- [1] Rama AN, Kushida CA. Restless legs syndrome and periodic limb movement disorder. *Med Clin North Am* 2004;88:653–67.
- [2] Weinstock LB, Fern SE, Duntley SP. Restless legs syndrome in patients with irritable bowel syndrome: response to small intestinal bacterial overgrowth therapy. *Dig Dis Sci* 2008;53:1252–6.
- [3] Scarpignato C, Pelosini I. Experimental and clinical pharmacology of rifaximin, a gastrointestinal selective antibiotic. *Digestion* 2006;73(Suppl. 1):13–27.
- [4] Fumi AL, Trexler K. Rifaximin treatment for symptoms of irritable bowel syndrome. *Ann Pharmacother* 2008;42:408–12.
- [5] Parodi A, Paolino S, Greco A, Drago F, Mansi C, Rebora A, et al. Small intestinal bacterial overgrowth in rosacea: clinical effectiveness of its eradication. *Clin Gastroenterol Hepatol* 2008;6:759–64.

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