

LOW-DOSE β -BLOCKER FOR POTS

In the first placebo-controlled trial of β -blockade in patients with postural tachycardia syndrome (POTS), Dr Satish Raj and colleagues have demonstrated that low doses of propranolol dampen the orthostatic increase in heart rate (HR) and reduce the symptom burden in these patients. “Perhaps the most important finding in this study,” remarks Raj, “is that the key to using β -blockers in this population is to find the ‘right’ dose and to resist the temptation that ‘more is always better’.”

POTS primarily affects women of childbearing age and is characterized by an excessive increase in HR, but no hypotension, upon standing. Associated symptoms include blurred vision, chest discomfort, lightheadedness, mental clouding, palpitations, and shortness of breath. The excessively increased HR and related symptoms in these patients resolve with sitting or lying back down.

Although most patients state that they ‘failed’ or did not tolerate β -blockers in the past, Raj and colleagues have found that these individuals generally respond well to 20 mg propranolol in terms of HR and symptoms. “While we were bothered by this apparent paradox,” comments Raj, “we hypothesized that the issue might be one of dose.” Thus, in their short-term, single-blind, crossover trial of propranolol in patients with POTS, they assessed low (20 mg) and high (80 mg) doses of the β -blocker.

Both doses effectively reduced patients’ orthostatic increase in HR and total symptom burden. However, although the higher dose had a more substantial effect on HR, there was no increased effect on symptom burden. Furthermore, 2 h after propranolol was administered, individual symptoms of lightheadedness, mental clouding and shortness of breath improved with 20 mg propranolol but did not significantly improve with the higher dose.

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Original article Raj, S. R. *et al.* Propranolol decreases tachycardia and improves symptoms in postural tachycardia syndrome. Less is more. *Circulation* **120**, 725–734 (2009).