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Letter to the Editor

Effect of *pranayam* (yogic breathing) and *shavasan* (relaxation training) on the frequency of benign ventricular ectopics in two patients with palpitations

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Deep breathing at six breaths per minute has been recently reported to be associated with a significant reduction in the frequency of premature ventricular complexes (PVC) in certain subjects [1]. The cardiorespiratory effects of guided, *pranayam* (slow and deep diaphragmatic breathing followed by alternate nostril breathing at rate of 6/min) and *shavasan* (guided progressive muscle relaxation) have been reported earlier [2,3]. Relaxation instruction and breathing exercises have been reported to have beneficial effects in patients with a previous myocardial infarction [4] and in a variety of psychosomatic conditions [5]. The rosary prayer and yoga mantras which involve slow and deep breathing have been demonstrated to synchronize cardiovascular rhythms and enhance respiratory sinus arrhythmia [6]. However, the effect of *pranayam* and relaxation training on frequency of PVC has not been studied so far. We hypothesized that *pranayam* with relaxation training may reduce the frequency of ectopics by effects on autonomic modulation of SA node. We report here the effect of *pranayam* and relaxation training on frequency of PVC in two patients with palpitations.

Patient 1 was a 35 year old female with a three month history of anxiety and palpitations and one episode of syncope unrelated to exertion. She had no history of heart disease, diabetes and was taking 50 mg atenolol once daily. Clinic blood pressure was 110/70 mm Hg, pulse rate 50/min, and heart rate 65/min. There were frequent unifocal PVC in a lead II rhythm strip. This patient was referred for a tilt table test. Frequent (24/min) unifocal PVC was noted during normal breathing at 12 breaths/min and runs of bigeminal rhythm occurred during 70° head-up tilt. Patient 2 was a 14 year old boy with frequent PVC and palpitations and an otherwise uneventful medical history. In both of them, deep breathing at 6/min abolished ectopics reproducibly.

Both patients gave informed consent to undergo yoga relaxation training. Beta-blockers were stopped in patient 1 and patient 2 was not taking any medication. Relaxation therapy consisting of *pranayam* and *shavasan* was taught to both subjects by a trained yoga instructor six days a week for a total duration of two months. Both patients were asked to practice the techniques daily at home. ECG was repeated after 2 months of training.

After 2 months of yoga therapy, both patients had fewer episodes of palpitations and could relieve palpitations by *pranayam* breathing. In both of them, there were no ectopics in a 5-min ECG obtained during supine rest, and ectopic frequency during tilt reduced from 7.5/min (before the training) to 3.5/min after training. Our findings are novel and interesting and point to the possibility that breathing exercises especially *pranayam* and relaxation training in general may be of value in patients with benign ventricular ectopics as adjunct to other medical therapy. Controlled trials are required in this direction.

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