

## **Pulmonary vein isolation for paroxysmal atrial fibrillation may cause new orthostatic hypotension and/or reflex syncope at postoperative acute phase**

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**Background.** It is reported that pulmonary vein isolation(PVI) for paroxysmal atrial fibrillation(PAF) cause some modifications of ganglionic plexi (vagal nerve plexus) around left atrium, therefore activity of the vagal nerve is inhibited and activity of the sympathetic nerve is relatively activated. But this clinical impact of change of autonomic activity is not clear. We estimated this clinical impact by examination of autonomic regulation in orthostatic load before and after PVI.

**Methods.** In 20 patients with PAF(10male,  $68.7 \pm 7.4$  years old age), we examined total heart rate in 24h-holter ECG, and baroreflex sensitivity(BRS) and heart rate variability(HRV) in head-up tilt test(HUT) before and after PVI. We checked whether orthostatic hypotension/reflex syncope emerged newly or not after PVI.

**Results.** All PVI for PAF were successfully performed. Total heart rate of 24h-holter ECG increased  $93017.4 \pm 9873.4$  beats/day before PVI to  $108321 \pm 11199.1$  beats/day after PVI( $p < 0.05$ ). BRS in HUT tended to decrease  $12.2 \pm 7.2$  ms/mmHg before PVI to  $7.34 \pm 8.2$  ms/mmHg after PVI ( $p < 0.05$ ) in supine position, and  $9.3 \pm 9.4$  ms/mmHg before PVI to  $9.3 \pm 9.4$  ms/mmHg after PVI ( $p = 0.065$ ) in tilt-up position. The number of positive HUT patient increased 3(10%) before PVI to 7(35%) after PVI.

**Conclusion.** Inhibition of vagal nerve and relative activation of sympathetic nerve after PVI may cause new sign of autonomic dysfunction such as orthostatic hypotension or reflex syncope at postoperative acute phase