## Supplementary methods

### propensity score matching (PSM) analysis

According to multivariate logistic regression analysis, the results shown that heart rate variability (HRV) parameters of SDNN and PNN50 were independently associated with LV enlargement in patients with frequent PVCs at baseline. Therefore, a 1:1 propensity score matching (PSM) analysis was conducted to control the impact of other risk factors of LV remodeling in patients with frequent PVCs. The PSM-SDNN model and PSM-PNN50 model of propensity matching were based on HRV indices of SDNN and PNN50, respectively. The cut-off values of SDNN or PNN50 were defined as the value of parameters larger than one standard deviation above the mean in normal Chinese adults [1]. The propensity scores of the PSM-SDNN model and PSM-PNN50 model were calculated using the following potential confounding variables, including sex, age, BMI, symptom duration, NT-proBNP, LVEDD, LVEF, mean 24- hour HR, 24-hour PVCs burden, NSVT, PVC site of origin, multifocal PVCs, QRS duration and minimum coupling interval.

## Supplementary Tables

**Table 1. The propensity score of patients with frequent PVC in the PSM-SDNN model**

|  |  |  |  |
| --- | --- | --- | --- |
|  | SDNN > 193ms | SDNN ≤ 193ms | *p* values |
| Subjects  | 134 | 134 |  |
| Propensity Score | 0.4 ± 0.1 | 0.4 ± 0.1 | 0.945 |

Data are expressed as mean ± SD. *p* values comparing the patients with SDNN > 193ms and patients with SDNN ≤ 193ms after propensity score matching are evaluated by Student’s t-test.

**Table 2. The propensity score of patients with frequent PVC in the PSM-PNN50 model**

|  |  |  |  |
| --- | --- | --- | --- |
|  | PNN50 > 28.3% | PNN50 ≤ 28.3% | *p* values |
| Subjects  | 175 | 175 |  |
| Propensity Score | 0.5 ± 0.1 | 0.5 ± 0.1 | 0.973 |

Data are expressed as mean ± SD. *p* values comparing the patients with PNN50 > 28.3% and patients with PNN50 ≤ 28.3% after propensity score matching are evaluated by the Student’s t-test.

**Table 3. The relationship between HRV and the LV remodeling after propensity score matching in the PSM-SDNN model**

|  |  |  |
| --- | --- | --- |
|  | Propensity score matched cohort | *p* values |
| LV enlargement | LV normal |
| Subjects  | 71 | 197 |  |
| SDNN, (ms) | 188.3 ± 77.6 | 181.9 ± 63.1 | 0.029 |

Data are expressed as mean ± SD. *p* values comparing the patients with left ventricular (LV) enlargement and patients with normal LV structure after propensity score matching are evaluated by Student’s t-test.

**Table 4. The relationship between HRV and the LV remodeling after propensity score matching in the PSM-PNN50 model**

|  |  |  |
| --- | --- | --- |
|  | Propensity score matched cohort | *p* values |
| LV enlargement | LV normal |
| Subjects  | 89 | 261 |  |
| PNN50, (%) | 33.4 ±28.2 | 32.2 ± 26.5 | 0.477 |

Data are expressed as mean ± SD. *p* values comparing the patients with left ventricular (LV) enlargement and patients with normal LV structure after propensity score matching are evaluated by Student’s t-test.

**Table 5. The** **recurrence rate of patients with frequent PVCs after ablation**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Before ablation(n = 411) | After ablation (n = 411) | *p* values |
| 24-h PVCs number, (n) | 18862.0 (12658.0-27023.0) | 8.0 (0.0-172.0) | 0.000 |
| 24-h PVCs burden, (%) | 18.9 (12.9-26.7) | 0.0 (0.0-0.2) | 0.000 |
| VPC recurrence |  |  |  |
| Yes, no. (%) | / | 42 (10.2%) |  |
| no, no. (%) | / | 369 (89.8%) |  |

Data are expressed as median (IQR) and no. (%). *p* values comparing the 24-hour PVCs number and burden of patients before ablation and after ablation are evaluated by Wilcoxon signed-rank test. Abbreviations: PVC, premature ventricular contraction. /, denote without data.

**Table 6. The relationship between the reversibility of** **LV enlargement and VPC recurrence**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Overall(n = 64) | After ablation | *p* values |
| LV enlargement(n = 10) | LV normal(n = 54) |
| VPC recurrence |  |  |  |  |
| Yes, no. (%) | 9 (14.1%) | 4 (40.0%) | 5 (9.3%) | 0.027 |
| No, no. (%) | 55 (85.9%) | 6 (60.0%) | 49 (90.7%) |  |

Data are expressed as no. (%). *p* values comparing the patients with left ventricular (LV) enlargement and patients with normal LV structure after ablation are evaluated by Pearson’s χ2 test.

## References

1. Liu HY, Yang Z, Meng FG, Guan YG, Ma YS, Liang SL, et al. Preoperative Heart Rate Variability as Predictors of Vagus Nerve Stimulation Outcome in Patients with Drug-resistant Epilepsy. Scientific reports. 2018 Mar 1;8(1):3856.