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STUDY ON RELATIONSHIP BETWEEN VENTRICULAR RATE CONTROL AND CARDIOPULMONARY EXERCISE FUNCTION & QUALITY OF LIFE AMONG PERMANENT ATRIAL FIBRILLATION PATIENTS

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Objectives It is controversial regarding the goal for controlling ventricular rate among permanent atrial fibrillation (AF) patients. RACE II tests showed that both the level 1 composite end point and the quality of life for ventricular rate lenient control group is no worse than strict control group among permanent AF patients. However, quality of life evaluated with RACE II was only based on rate of re-hospitalisation. There is no clinical research on association between ventricular rate control and cardiopulmonary exercise function/quality of life among permanent AF patients. This study aimed to explore their relationship.

Methods We included 66 in-and out- patients with permanent AF who visited Peking University Third Hospital from September 2009 to May 2011. The enrolled patients aged from 35 to 80 (Mean: 66.3, SD: 9.3), and 46 were male (69.7%) and 20 female (30.3%). Data on their AF duration, complications, clinical drug usage, main biochemical indicators and Holter examinations were collected. All patients took a cardiopulmonary exercise testing (CPET) and their heart rate at rest and during moderate exercise, VO_2 peak/kg, MET speak and VO_2AT/kg were recorded. SP-36 quality of life evaluation forms were filled out.

Results

1. Stratified by different ventricular rate control (resting HR, HR during moderate exercise, the both above, and average heart

rate), there was no significant differences of VO_2 peak/kg, MET speak and VO_2AT/kg between ventricular rate lenient control group and strict control group.
2. Stratified by resting heart rate, PCS and MCS for ventricular rate lenient control group were significantly higher than strict control group. Multivariate linear regression results indicated that resting heart rate was not correlated with PCS or MCS, with p values close to 0.05.
3. Stratified by HR during moderate exercise, MCS for ventricular rate lenient control group was significantly higher than strict control group, but difference of PCS was of no statistical significance. Multivariate linear regression results suggested that HR during moderate exercise was correlated with MCS.
4. Stratified by average heart rate, there was no significant difference of PCS and MCS between ventricular rate lenient control group and strict control group.

Conclusions

1. For permanent AF patients, ventricular rate lenient control and strict control did not make a significant difference in cardiopulmonary exercise function.
2. Compared with ventricular rate lenient control, strict control can significantly raise the quality of life among permanent AF patients.