GW23-e1013 **RELATIONSHIP BETWEEN ATRIAL FIBRILLATION CARDIOVERSION AND F**

doi:10.1136/heartjnl-2012-302920t.3

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Objectives To investigate the relationship between atrial fibrillation cardioversion and f wave in electrocardiogram, providing an ordinary and noninvasive method for the clinical prediction and treatment

Methods We selected 50 cases of patients with atrial fibrillation living in our hospital and divided into two groups according to the size of each indictors, such as f wave discrepancy, f wave amplitude, f wave duration, diameter of the left atrial, left ventricular ejection fraction and plasma BNP level. (f wave duration ≥110 ms vs f wave duration <110 ms; f wave discrepancy <50 ms vs f wave discrepancy ≥50 ms; f wave amplitude ≥0.1 mv vs f wave amplitude <0.1 mv; diameter of the left atrial <40 mm vs diameter of the left atrial ≥40 mm; left ventricular ejection fraction ≥50% vs left ventricular ejection fraction <50%; plasma BNP level <200 mmol/l vs plasma BNP level ≥200 mmol/l). We observed the rate of atrial fibrillation within 72 h and calculated the predictive value of indicators for atrial fibrillation cardioversion.

Results

1. The diversion rate from atrial fibrillation was 69% in group of f wave duration ≥110 ms vs 35% in group of f wave duration <110 ms ($p<0.05$), 55% in group of f wave discrepancy <50 ms vs 24% in group of f wave discrepancy≥50 ms ($p<0.05$), 60% in group of f wave amplitude ≥0.1 mv vs 28% in group of f wave amplitude <0.1 mv ($p<0.05$), 70% in group of the left atrial diameter <40 mm vs 22% in group of the left atrial diameter ≥40 mm ($p<0.05$), 54% in group of left ventricular ejection fraction ≥50% vs 15% in group of left ventricular ejection fraction <50%, 62% in group of plasma BNP level <200 mmol/l vs 25% in group of plasma BNP level ≥200 mmol/l ($p<0.05$).
2. Receiver operating characteristic curve show that: area under the curve of f wave duration ≥110 ms was 0.71, of f wave discrepancy <50 ms was 0.70, of f wave amplitude ≥0.1 mv was 0.70, of the left atrial diameter <40 cm was 0.76, of left ventricular ejection fraction ≥50% was 0.70, of plasma BNP level <200 mmol/l was 0.73, all larger than 0.7, with p value all less than 0.05. So all of them had diagnostic value to some extent. When the Youden's index index(YI)reach maxism, their cut point were 78 ms, 42 ms, 1.0 mv, 39.5 mm, 60%, 207 mmol/l.
3. Among single risk factor, the specificity, sensitivity, positive predictive value and negative predictive value of f wave duration ≥110 ms were 41%, 86%, 69%, 65%; the specificity, sensitivity, positive predictive value and negative predictive value of f wave dispersion <50 ms were 82%, 46%, 55%, 76%; the specificity, sensitivity, positive predictive value and negative predictive value of f wave amplitude ≥0.1 mv were 68%, 64%, 60%, 72%; the specificity, sensitivity, positive predictive value and negative predictive value of the left atrial diameter <40 mm were 73%, 75%, 70%, 78%; the specificity, sensitivity, positive predictive value and negative predictive value of left ventricular ejection fraction ≥50% were 91%, 39%, 54%, 85%; the specificity, sensitivity, positive predictive value and negative predictive value of plasma BNP level <200 mmol/l were 73%, 64%, 62%, 75%, the sensitivity and negative predictive value of left ventricular ejection fraction ≥50% to predict cardioversion of atrial fibrillation was highest, and the specificity and positive value of f wave duration ≥110 ms to predict cardioversion of atrial fibrillation was highest. Along with more than two risk factors, the specificity and negative predictive value were much higher, but the sensitivity and positive predictive value were much lower. Multiple logistic regression analysis revealed that the f wave amplitude was an independent predictor of cardioversion of atrial fibrillation.

Conclusions F wave characteristics are electrocardiographic markers that can be used for the prediction of cardioversion of atrial fibrillation.