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THE RELATIONSHIP BETWEEN TLR2, HIF-1α, MMP-9 WITH THE OCCURRENCE AND MAINTENANCE OF ATRIAL FIBRILLATION

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Yanmin Xu, Yuzhi Liu, Meiyu Wei, Hongmei Liu, Guangping Li, Yanmin Xu. *The Second Hospital of Tian Jin Medical University Tian Jin*

Objectives To discuss the relation between TLR2, HIF-1α, MMP-9 as immunological and inflammatory factor in the occurrence and maintenance of atrial fibrillation.

Methods 57 cases of atrial fibrillation were chosen, 20 cases were paroxysmal atrial fibrillation and 22 cases were persistent atrial fibrillation and 15 cases were permanent atrial fibrillation, 23 sinus rhythm cases were also selected into the control group. TLR2, HIF-1α, MMP-9 levels of each group were compared and left atrial diameter and LVEF were measured, respectively.

Results TLR2 level of permanent atrial fibrillation group was significantly higher than that of the other three groups ($p<0.05$) and the level of persistent atrial fibrillation group was significantly higher than that of paroxysmal atrial fibrillation and control group ($p<0.05$), the level between paroxysmal atrial fibrillation and control group has no difference ($p>0.05$). The MMP-9 level of permanent atrial fibrillation group was significantly higher than that of the other three groups ($p<0.05$) and the level of persistent atrial fibrillation group was significantly higher than that of paroxysmal atrial fibrillation and control group ($p<0.05$), the level between paroxysmal atrial fibrillation and control group has no difference ($p>0.05$). The HIF-1α levels of permanent atrial fibrillation group and persistent atrial fibrillation group was significantly higher than that of the other two groups ($p<0.05$), the level between permanent atrial fibrillation group and persistent atrial fibrillation group has no difference ($p>0.05$), the level between paroxysmal atrial fibrillation and control group has no difference ($p>0.05$). Compared with left atrial diameter of the other three groups, that of the permanent atrial fibrillation group increased significantly. Compared with left atrial diameter of paroxysmal atrial fibrillation and control group that of the persistent atrial fibrillation group increased significantly. The left atrial diameter of paroxysmal atrial fibrillation higher than that of the control group ($p<0.05$). However, the LVEF decreased significantly in the atrial fibrillation groups ($p<0.05$). The LVEF between atrial fibrillation groups has no difference ($p>0.05$) between persistent and permanent atrial fibrillation group, there is a positive correlation between the TLR2, HIF-1α, MMP-9 levels and left atrial diameter, but there is a negative correlation between the levels and LVEF.

Conclusions The increase of TLR2、HIF-1α, MMP-9 level probably participates in occurrence of atrial fibrillation, thus it indicates that the inflammatory reaction may promote the occurrence and maintenance of atrial fibrillation.