The RESEARCH ON CALCIUM HOMEOSTASIS EXPRESSION AND GENE TRANSCRIPTION OF ATRIAL MYOCYTES IN PATIENTS WITH ATRIAL FIBRILLATION

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Objective Inquire into the molecular biological mechanism of the occurrence and maintenance of atrial fibrillation (AF) by researching adjustment and control of the L type the passage and muscles sarcoplasmic reticulum (SR) Ca\(^{2+}\) - the ATPase expression by main calcium ion \(\text{Ca}^{2+}\) of AF and the sinus rhythm.

Methods We took 200 mg right auricle tissues and (or) left atrium tissues from each of the 63 patients undergoing cardiac surgery (including three groups: chronic AF, paroxysmal AF and sinus rhythm), extracted the protein and measured the density of overall sample protein, using Western-blot method to analyse the expression level of atria muscle L-type Ca\(^{2+}\) -Passage and SR Ca\(^{2+}\)-the ATPase. Isolated the total RNA of the atria muscle tissue by Trizol Method, measured the expression amount of atria muscle L-type Ca\(^{2+}\) -Passage and SR Ca\(^{2+}\)-the ATPase mRNA with RT-PCR method. Detailed clinical data were obtained before and after operation.

Results Firstly, left atrial diameter was obviously higher in patients with chronic AF or paroxysmal AF than in patients with sinus rhythm. Secondly, the patients with chronic AF have lower ratio of L-type Ca\(^{2+}\)/GAPDH protein and SR Ca\(^{2+}\)-ATPase/GAPDH protein than the group of sinus rhythm both in left atrium and right atrium with significant difference. Compared with sinus rhythm group, ratio of L-type Ca\(^{2+}\)/GAPDH protein and SR Ca\(^{2+}\)-ATPase/GAPDH protein in paroxysmal AF group decreased with no statistical significance. Secondly, the patients with chronic AF and not significantly in paroxysmal AF group. There was statistical significance between left and right atrium.