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Expression of tyrosine hydroxylase and growth-associated protein 43 in aging atrial fibrillation patients of Xinjiang Uygur and Han nationality

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ABSTRACT. The aim of this study was to explore the changes in gene and protein expressions of tyrosine hydroxylase (TH) and growth-associated protein 43 (GAP43) in aging atrial fibrillation patients of Xinjiang Uygur and Han nationality, and the significance of the changes. Real-time polymerase chain reaction and Western blot analysis were used to detect gene and protein expressions of TH and GAP43 in atrial tissues of 54 patients with valvular heart disease. mRNA and protein expressions of GAP43 and TH were significantly

different between the sinus rhythm and atrial fibrillation groups ($P < 0.05$). Protein expressions of GAP43 and TH of both nationalities differed significantly between the sinus rhythm group and the atrial fibrillation group ($P < 0.05$), whereas there was no statistical difference between the two nationalities within each group ($P > 0.05$). Protein expressions of GAP43 and TH differed significantly among different age groups of different nationalities in the sinus rhythm and atrial fibrillation groups ($P < 0.05$); only protein expression of GAP43 differed significantly in different age groups in the atrial fibrillation group ($P < 0.05$). The changes of mRNA and protein expressions of TH and GAP43 played a vital role in the process of maintaining the atrial fibrillation. Therefore, increased expression of TH and GAP43 might be a molecular mechanism for left atrial myoelectricity remodeling of aging atrial fibrillation patients, which might be potential therapeutic targets of atrial fibrillation.

Key words: Atrial fibrillation; Xinjiang Uygur; Han nationality; Aging; Tyrosine hydroxylase; Growth-associated protein (GAP43)