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EXPRESSION OF LYMPHOCYTE KCA3.1 AND CYTOKINE IN SHR

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Wang Ling-peng, Luo Jian. *Department of cardiology of the First Affiliated Hospital, Xin Jiang Medical University*

Objectives to research the expression of intermediate-conductance Ca^{2+} -activated K^+ channel ($\text{K}_{\text{Ca}3.1}$), $\text{TNF-}\alpha$ mRNA and protein in lymphocyte derived from spontaneously hypertensive rat (SHR).

Methods Take SHR and Wistar rats as experimental animals, to separate peripheral blood lymphocytes in rats, using Real-time PCR and Western blot technique were used to detect the express of KCa3.1 , $\text{TNF-}\alpha$ in SHR lymphocytes.

Results

- (1) In SHR, the expression of KCa3.1 gene was significantly higher in lymphocytes (1.3025 ± 0.2117 vs 0.4475 ± 0.2012 ; $p < 0.05$) compared with Wistar rats. The expression levels of $\text{TNF-}\alpha$ mRNA in the SHR lymphocytes were significantly increased compared with the control group (1.4257 ± 0.1317 vs 0.3836 ± 0.1626 ; $p < 0.05$).
- (2) KCa3.1 , $\text{TNF-}\alpha$ protein expression were also increased in SHR than in control ($p < 0.05$).

Conclusions The lymphocyte KCa3.1 , $\text{TNF-}\alpha$ expression are upregulated in SHR suggesting K_{Ca} channel may contribute to the development of hypertension by lymphocyte activation.