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THE EXPRESSIONS OF IFN γ AND IL-4 IN MURINE DIFFERENT DEGREE ATHEROSCLEROTIC PLAQUES AND THE CORRELATION WITH SERUM B7-H3 LEVEL

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Objective By observing the expression of IFN γ and IL-4 in murine different degree atherosclerotic plaques and the relationship with serum B7-H3, this research discussed the function of Cellular immune involved by IFN γ and humoral immune involved by IL-4 in the occurrence and development of atherosclerotic plaques and the mechanism of these cytokines.

Methods Fifty-one healthy male Wistar rats (weight 220±10 g) were randomly divided into normal control group (11) and experimental group (40), and the latter were further divided into High-fat diet group (3w group; 10), Mild atherosclerosis group (4w group; 13), Significantly arteriosclerosis group (5w group; 17). Normal control group had been raised with basic food and ordinary water for five weeks. experimental group had been raised with basic food and ordinary water for one week, then were given promoting arteriosclerosis food and ordinary water. When given promoting arteriosclerosis food, each rat was given 40 million u/kg weight vitamin D3 by intraperitoneal injection for three consecutive days. Sample processing: Rats had been fasting for 12 h, we measured weight, collected blood, and obtained 1 cm artery tissue underneath aortic arch (about 1 cm), for HE Dyeing and immunohistochemical test. We analysed IFN γ and IL-4 expression in vascular tissue with semi-quantitative immunohistochemical method, measured lipid levels, and detected murine serum B7-H3 level with ELISA. Experimental data according to SPSS16.0 statistical software, proceeded Variance analysis, Pairwise comparison

occurred with Student-Newman-Keuls among each mean, showed in \pm s, indicated statistical significance: $p < 0.05$.

Result (1) HE Dyeing: Compared with normal control group, in high-fat diet group (3 weeks group), a few small patches in vascular wall are convex to the lumen, and smooth muscle cells in tunica media arrange less regularly, nuclei is like long pole. In mild atherosclerosis group (4 weeks group), several small patches in vascular wall are convex to the lumen, smooth muscle cells in tunica media slightly proliferated, arranging less regularly. In significantly arteriosclerosis group (5 weeks group), vascular wall endangium has big patches centripetally, smooth muscle cells in tunica media significantly proliferated, elastic plates were damaged, lipid drops were melt, and there were foam cells, and deposited purple granular calcium salt. (2) Semi-quantitative immunohistochemical analysis: IFN γ 's and IL-4's expressions in experimental group were higher than in normal control group ($p < 0.001$), and in experimental group, as the extent of atherosclerosis deteriorated, the expressions of IFN γ and IL-4 gradually increased ($p < 0.001$). (3) serum B7-H3 level: Compared with normal controls, the B7-H3's expression in high-fat diet group (3 weeks group), mild atherosclerosis group (4 weeks group), significantly arteriosclerosis group (5 weeks group) reduced, but had no statistically significant differences ($p > 0.05$, and had no statistically significant difference in experimental groups ($p > 0.05$).

Conclusion (1) Cellular immune involved by IFN γ and humoral immune involved by IL-4 were both involved in the formation of atherosclerosis, and could promote arteriosclerosis. (2) The formation of the atherosclerosis involved by IFN γ and IL-4 may have no correlation with co stimulating molecules B7-H3.