

suggested a potential role for curcumin treatment in anti-inflammation and reduction of neointimal formation.

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ATTENUATION OF NEOINTIMAL HYPERPLASIA THROUGH DOWN-REGULATION OF INTERLEUKIN-18 EXPRESSION BY CURCUMIN IN RAT BALLOON INJURY MODEL

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Wu Qiang, Chang Peng, Bai Feng. *Second Hospital of Lanzhou University*

Objectives Vascular inflammation could control neointimal hyperplasia processes in vascular healing after injured. Studies had indicated drug-eluting stents (DES) improved the efficacy of percutaneous coronary intervention by modulating vascular inflammation and preventing neointimal proliferation and in-stent restenosis. But eluted drugs always delay re-endothelialisation and impair endothelial function. Hence, this study aimed to evaluate the efficacy of curcumin, which could modulate inflammation and attenuate neointimal hyperplasia.

Methods Neointimal formation was induced in the rat right carotid artery using a balloon angioplasty catheter. Fifty-six male SD rats were randomly divided into three groups, sham operation group (n=8), vascular injury group (n=24), curcumin-treated group (n=24). The sham operation group and vascular injury group was given intragastric administration of normal saline. Curcumin was given in curcumin-treated group (100 mg/kg/d). These rat right carotid arteries were harvested at 3, 7, 14, and 28 days and were subjected to histologic analysis. Biomarkers of neointimal hyperplasia, inflammation were assessed by enzyme linked immuno-sorbent assay and real time RT-PCR.

Results Neointimal formation was induced in the rat right carotid artery using a balloon angioplasty catheter. Fifty-six male SD rats were randomly divided into three groups: sham operation group (n=8); vascular injury group (n=24); curcumin-treated group (n=24). The sham operation group and vascular injury group was given intragastric administration of normal saline. Curcumin was given in curcumin-treated group (100 mg/kg/d). These rat right carotid arteries were harvested at 3, 7, 14, and 28 days and were subjected to histological analysis. Biomarkers of neointimal hyperplasia, inflammation were assessed by enzyme linked immuno-sorbent assay and real time RT-PCR.

Conclusions Inflammation may be one of the key factors in the neointimal hyperplasia. These results identified a critical role of IL-18 in neointimal formation in rat model of vascular injury at the early stages. Curcumin could reduce neointimal formation by reducing IL-18 expression in injured arteries. These results also