

论著

粉防己碱对高血压大鼠血管平滑肌细胞增殖的抑制作用

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摘要 探讨了粉防己碱(Tet)抑制培养的大鼠主动脉平滑肌细胞(AVSMC)增殖的作用, MTT法分析细胞增殖, [³H] TdR参入法分析细胞DNA合成. 结果显示: ①肾血管性高血压(RH, 二肾一夹(2K1C)术后18周)大鼠AVSMC超微结构呈典型的合成细胞特征; ②RH大鼠AVSMC具有更活跃的增殖倾向, 血管紧张素II(Ang II)和去甲肾上腺素(NE)刺激下指数增长长期细胞数和NE刺激下的AVSMC生长率均明显增高; ③Tet(50 mg·kg⁻¹·d⁻¹, po, 2K1C术后9周始, 连续9周)治疗组的AVSMC对NE和Ang II诱导的细胞增殖反应性和生长率较RH组明显降低; ④对RH组和伪手术组大鼠的AVSMC, Tet(0.1~10 μmol·L⁻¹)体外给药可浓度依赖性地抑制NE或Ang II诱导的增殖和 [³H] TdR参入. 研究表明, RH大鼠AVSMC对NE和Ang II促增殖作用敏感性及反应性增高; Tet可降低其对NE和Ang II的反应性, 抑制AVSMC增殖和DNA合成.

关键词 [粉防己碱](#) [高血压](#), [肾血管性](#) [肌, 平滑, 血管](#) [细胞, 培养的](#) [细胞增殖](#)

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Depressive effect on proliferation of vascular smooth muscle cells by tetrandrine in hypertensive rats

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Abstract

To analyse the effect of tetrandrine(Tet) on proliferation of aortic vascular smooth muscle cells (AVSMC), AVSMC were isolated and cultured from sham-operated rats(Sham), renovascular hypertensive rats (RHR, 18 weeks after two kidney one clip(2K1C) operation), and Tet (50 mg·kg⁻¹·d⁻¹ po for 9 weeks from week 9 after 2K1C operation)treated RHR. The proliferation of AVSMC was detected by MTT method, and the DNA synthesis was evaluated by [³H]-thymidine incorporation. The results showed that ①The ultrastructure of aorta suggested that AVSMC in RHR had transferred from contractile phenotype to synthetic phenotype; ②Compared to Sham, AVSMC from RHR showed a higher proliferative property with a higher cell number and an increased growth rate stimulated by norepinephrine(NE) or angiotensin II (Ang II); ③Compared to untreated RHR, AVSMC from Tet treated RHR showed a reduced reactivity to NE- or Ang II-stimulated proliferation and growth rate; ④Tet(0.1-10 μmol·L⁻¹) treated *in vitro* induced a concentration-dependent depression in [³H] thymidine-incorporation stimulated by NE or Ang II in AVSMC from either RHR or Sham. This study provides an evidence of increased reactivity to NE or Ang II in AVSMC of RHR. Tet inhibits the proliferation and DNA synthesis in AVSMC, depresses the susceptibility of AVSMC to Ang II and NE, both contribute to the regression effect on hypertensive vascular remodeling.

Key words [tetrandrine](#) [hypertension](#) [renovascular](#) [muscle](#) [smooth](#) [vascular](#) [cells](#) [cultured](#) [cell proliferation](#)

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