doi:10.11659/jjssx.04E018021

·基础研究·

丹参酮 ⅡA 对 Adriam 诱导的人肾小球系膜细胞凋亡的保护作用

李 伟,张莹涛,高 娜 (延安市人民医院肾内科,陕西 延安 716000)

[摘 要] **目的** 探究丹参酮ⅡA(TSⅡA)对阿霉素(Adriam)诱导的肾小球系膜细胞 HMCL 凋亡的作用。**方法** 用不同浓度的 TSⅡA 处理 HMCL 细胞,确定安全用药范围;将细胞随机分为 HMCL 组、Adriamycin 组、Adriam + TSⅡA(5 μM)组、Adriam + TSⅡA(10 μM)组和 Adriam + TSⅡA(20 μM)组。除 HMCL 组外,其余组均用 Adriamycin 处理细胞,Adriam + TSⅡA(5,10,20 μM)组同时加入 5、10、20 μM 的 TSⅡA 处理细胞,用 CCK8 法检测细胞增殖,流式和 Hoechst 染色检测细胞凋亡,Western blot 检测 Caspase-3 和 Caspase-9 的表达。**结果** 与 HMCL 组比较,Adriamycin 组细胞增殖速度明显降低;与 Adriamycin 组比较,Adriam + TSⅡA(5,10,20 μM)组细胞增殖速度明显升高;同时,Adriamycin 组细胞凋亡率与 HMCL 组比较明显升高,Adriam + TSⅡA(5,10,20 μM)组细胞凋亡率明显低于 Adriamycin 组;此外,Adriam 能显著促进 HMCL 细胞 Caspase-3 和 Caspase-9 表达,TSⅡA 能显著减弱 Adriam 促进 Caspase-3 和 Caspase-9 表达的作用。**结论** TSⅡA 能通过抑制凋亡相关蛋白的表达抑制 Adriam 诱导的肾小管系膜细胞凋亡。

[关键词] 丹参酮 IIA;肾小球系膜细胞;凋亡;阿霉素

[中图分类号] R692 [文献标识码] A [收稿日期] 2018-04-08

Protective effects of tanshinone ⅡA on adriamycin-induced apoptosis of human mesangial cells

LI Wei,ZHANG Ying-tao,GAO Na (Department of Nephrology, Yan'an People's Hospital,Yanan Shaanxi 716000,China)

Abstract:Objective To investigate the effects of tanshinone ⅡA (TS ⅡA) on adriamycin (Adriam)-induced apoptosis of human mesangial cells HMCL. **Methods** Cells were treated with different concentrations of TS ⅡA to determine the safe range on HMCL. Cells were divided into HMCL group,Adriamycin group,Adriam + TSⅡA(5 μM) group,Adriam + TSⅡA(10 μM) group and Adriam + TSⅡA(20 μM) group and treated with Adriamycin except HMCL group. Adriam + TSⅡA (5,10,20 μM) group also were treated with TSⅡA (5,10,20 μM) respectively. Cell proliferation was measured by CCK8 assay,flow cytometry and Hoechst staining were performed for cell apoptosis. The expression levels of Caspase-3 and Caspase-9 were determined by Western blot. **Results** Compared with HMCL group, cell growth was inhibited in Adriamycin group;compared with Adriamycin group,cell growth was induced in Adriam + TSⅡA (5,10,20 μM) group. Meanwhile,the apoptosis rate in Adriamycin group was increased compared with HMCL group,but decreased in Adriam + TSⅡA (5,10,20 μM) group compared with Adriamycin group. In addition,Adriam induced expressions of Caspase-3 and Caspase-9. TSⅡA attenuated the effects of Adriam on

[基金项目] 陕西省自然科学发展项目(XZ-4223)

[通信作者] 高娜,E-mail:79784009@qq.com

[22] Balducci L,Hardy CL,Lyman GH,et al. Hemopoietic reserve in the older cancer patient:Clinical and economic considerations[J]. Cancer Control,2000,7(6):539-547. doi:10.1177/107327480000700605.

[23] Pearce D,Bonnet D. Ageing within the hematopoietic stem cell compartment[J]. Mech Ageing Dev,2009,130(1-2):54-57. doi:10.1016/j.mad.2008.04.005.

[24] Pang WW,Price EA,Sahoo D,et al. Human bone marrow hematopoietic stem cells are increased in frequency and myeloid-biased with age [J]. Proc Natl Acad Sci USA,2011,108(50):20012-20017. doi:10.1073/pnas.1116110108.

[25] Zhu J,Mu X,Zeng J,et al. Ginsenoside Rg1 prevents cognitive impairment and hippocampus senescence in a rat model of D-galactose-induced aging[J]. PLoS One,2014,9(6):e101291. doi:10.1371/journal.pone.0101291.

[26] Li J,Cai D,Yao X,et al. Protective effect of ginsenoside Rg1 on hematopoietic stem/progenitor cells through attenuating oxidative stress and the Wnt/β-catenin signaling pathway in a mouse model of d-galactose-induced aging[J]. Int J Mol Sci,2016,17(6):849. doi:10.3390/ijms17060849.

[27] Farrella TL,McGuireb TR,Bilekc L. Changes in the frequencies of human hematopoietic stem and progenitor cells with age and site [J]. Exp Hematol,2014,42(2):146-154. doi:10.1016/j.exphem.2013.11.003.

[28] Xiao Y,Wang J,Song H,et al. $CD34^+$ cells from patients with myelodysplastic syndrome present different p21 dependent premature senescence[J]. Leuk Res,2013,37(3):333-340. doi:10.1016/j.leukres.2012.11.006.

[29] Wang ZL,Chen LB,Qiu Z,et al. GinsenosideRg1 ameliorates testicular senescence changes in dgalinduced aging mice via antiinflammatory and antioxidative mechanisms[J]. Mol Med Rep,2018,17(5):6269-6276. doi:10.3892/mmr.2018.8659.

(编辑:左艳芳)