

基础医学

2型糖尿病大鼠脑组织TIPE2的表达特征及其与Aβ1-40沉积的相关性

孙忠文<sup>1</sup>, 杜鹃<sup>2</sup>, 鲍梦馨<sup>3</sup>, 陈娟<sup>1</sup>, 朱梅佳<sup>4</sup>

1. 山东大学医学院, 济南 250012; 2. 山东大学附属千佛山医院医学研究中心, 济南 250014;  
3. 聊城市人民医院神经内科, 山东 聊城 252000; 4. 山东大学附属千佛山医院神经内科, 济南 250014

摘要:

目的 探讨2型糖尿病大鼠脑组织肿瘤坏死因子α诱导蛋白8样因子2 (TIPE2) 的表达特征及其与淀粉样蛋白Aβ1-40的相关性。方法 GK大鼠为2型糖尿病模型组 (GK组), Wistar大鼠为非糖尿病模型组 (Wistar组)。运用免疫组织化学染色法检测脑组织TIPE2和Aβ1-40的表达及空间分布; RT-PCR法和Western blot法分别检测脑组织TIPE2 mRNA水平和蛋白含量; ELISA法检测脑组织Aβ1-40蛋白含量。结果 TIPE2主要表达于皮层和皮层下组织结构的神经胶质细胞和微/小血管管壁。与Wistar组相比, GK组大鼠脑组织TIPE2蛋白、mRNA、阳染血管数和阳染神经胶质细胞数均显著增高 (P均<0.05)。Aβ1-40主要分布于皮质和海马等组织结构的神经元、神经胶质细胞和血管壁。与Wistar组相比, GK组大鼠脑组织Aβ1-40蛋白、阳染血管数和阳染细胞数均显著增高 (P均<0.05)。脑组织TIPE2蛋白表达与Aβ1-40水平在Wistar组 (r=0.951) 和GK组 (r=0.954) 均呈正相关 (P均<0.05)。结论 糖尿病大鼠脑组织TIPE2表达增多, 并且与Aβ1-40沉积有关, 提示TIPE2可能参与糖尿病脑组织损伤的发生发展。

关键词: TIPE2; β-淀粉样蛋白; 糖尿病; 炎症反应; GK大鼠

Expression of TIPE2 and its association with Aβ1-40 deposition in brain tissue of type 2 diabetic GK rat

SUN Zhong-wen<sup>1</sup>, DU Juan<sup>2</sup>, BAO Meng-xin<sup>3</sup>, CHEN Juan<sup>1</sup>, ZHU Mei-jia<sup>4</sup>

1. School of Medicine, Shandong University, Jinan 250012, China;  
2. Medical Research Center, Qianfoshan Hospital affiliated to Shandong University, Jinan 250014, China;  
3. Department of Neurology, Liaocheng People's Hospital, Liaocheng 252000, Shandong, China;  
4. Department of Neurology Qianfoshan Hospital affiliated to Shandong University, Jinan 250014, China

Abstract:

Objective To investigate the expression of tumor necrosis factor-α induced protein-8 like-2 (TIPE2) and its association with amyloid beta 1-40 deposition in brain tissue of type 2 diabetic GK rat. Methods GK rats were selected as type 2 diabetic rat model (GK group), and Wistar rats were selected as non-diabetic rat model (Wistar group). Then the spatial distribution of TIPE2 and Aβ1-40 in brain tissue was observed by immunohistochemistry (IHC). The mRNA and protein level of TIPE2 in brain tissue was detected by RT-PCR and Western blot respectively. The expression of Aβ1-40 in brain tissue was quantized by ELISA. Results TIPE2 was observed in neuroglial cells and small blood vessels of cerebral cortex and subcortical structures in rat brain tissue. Compared to Wistar group, the expression of TIPE2 in brain tissue was significantly higher in GK group (P<0.05). Aβ1-40 was detected in neurons, neuroglial cells, and brain blood vessel wall of cerebral cortex and hippocampus. Compared to Wistar group, expression of Aβ1-40 in brain tissue was significantly higher in GK group (P<0.05). The expression of TIPE2 was positively associated with Aβ1-40 level both in Wistar group (r=0.951, P<0.05) and GK group (r=0.954, P<0.05). Conclusion TIPE2 expression in brain from type 2 diabetic GK group increases significantly than Wistar control group and is positively associated with Aβ1-40 deposition, indicating the role of TIPE2 in diabetic brain damage.

Keywords: TIPE2; Beta-amyloid protein; Diabetes mellitus; Inflammation; GK rats

收稿日期 2012-12-06 修回日期 网络版发布日期

DOI:

基金项目:

山东省自然科学基金 (ZR2010HM101; Y2008C124); 山东省科技攻关基金 (2007GGWZ02056); 济南市科技发展计划 (201202053)

通讯作者: 朱梅佳 (1961- ), 女, 教授, 硕士生导师, 主要从事神经病学研究。E-mail:

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF (3722KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ TIPE2; β-淀粉样蛋白; 糖尿病; 炎症反应; GK大鼠

本文作者相关文章

PubMed

zhumeijia1818@163.com

作者简介: 孙忠文(1986-), 男, 硕士研究生, 主要从事神经病学研究。E-mail: sunzhwen@163.com

作者Email:

---

参考文献:

本刊中的类似文章

---

Copyright by 山东大学学报(医学版)