[1]张光伟,贺学农,周昌龙,等.血小板源性生长因子受体在实验性蛛网膜下腔出血后早期脑损伤中的作用[J].第三军医大学学报,2013,35(13):1398-1401.

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血小板源性生长因子受体在实验性蛛网膜下腔出血后早期脑损伤中的作用(PDF)

《第三军医大学学报》[ISSN:1000-5404/CN:51-1095/R] 卷: 35 期数: 2013年第13期 页码: 1398-1401 栏目: 论著 出版日期: 2013-07-15

Title: Role of platelet-derived growth factor receptor in early brain injury following subarachnoid hemorrhage

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关键词: 蛛网膜下腔出血; 早期脑损伤; 血小板源性生长因子受体; 凋亡; 脑水肿

Keywords: aneurysmal subarachnoid hemorrhage; early brain injury; platelet-derived growth factor receptor; apoptosis; cephaledema

分类号: R341; R363; R743.35

文献标志码: A

摘要: 目的 通过研究大鼠蛛网膜下腔出血（subarachnoid hemorrhage, SAH）后脑水肿及细胞凋亡情况，初步探讨血小板源性生长因子受体（platelet-derived growth factor receptor, PDGFR）参与早期脑损伤的可能机制。 方法 采用随机数字表法将成年雄性SD大鼠分配至假手术组、SAH组、SAH+Imatinib组、SAH+PDGF-BB组。Imatinib为PDGFR拮抗剂，PDGF-BB为其激动剂，每组18只。采用血管内丝线穿刺颈内动脉分叉处的方法，建立SAH模型。SAH+Imatinib组大鼠在建模前1 h，行腹腔注射Imatinib处理；SAH+PDGF-BB组大鼠建模前1 h，行侧脑

室注射PDGF-BB处理。处理后24 h，对各组动物的死亡率、神经功能学评分和脑水含量指标进行研究；RT-PCR、Western blot检测海马组织Caspase-3的表达。 结果 SAH+PDGF-BB组大鼠死亡率、脑组织含水量最高，神经行为功能学评分最低（*P*<0.01）；SAH+Imatinib组与SAH组比较，大鼠死亡率、脑组织含水量有所下降，神经行为功能学评分有所提高（*P*<0.01）；与其他组比较，SAH+PDGF-BB组大鼠海马组织Caspase-3 mRNA表达最高（*P*<0.01），SAH+Imatinib组与SAH组比较，海马组织Caspase-3 mRNA表达有所下降（*P*<0.01）；Western blot检测趋势与RT-PCR检测结果一致。 结论 PDGFR参与SAH后早期脑损害，其拮抗剂Imatinib能在一定程度上减轻早期脑损伤。

Abstract: Objective To observe cephaledema and cell apoptosis in rats following subarachnoid hemorrhage (SAH), and to explore the mechanism of platelet-derived growth factor receptor (PDGFR) involving in the development of early brain injury. Methods Adult male SD rats were randomly divided into 4 groups including a sham operation group, a SAH group, a SAH+imatinib group, and a SAH+PDGF-BB group (*n*=18). SAH mouse models were established by using intravascular silk puncture of the internal carotid artery crotch. The rats of the SAH+imatinib group were given an intraperitoneal injection of imatinib at 1 h before modeling, while those of the SAH+PDGF-BB group were given an intracerebroventricular injection of PDGF-BB at 1 h before modeling. After treatment for 24 h, the mortality, water content in brain and neurological function score were determined. Caspase-3 expression in hippocampus was detected by RT-PCR and Western blotting. Results The mortality, brain water content and caspase-3 expression level were the highest in the SAH+PDGF-BB group, but the neurological function score was the lowest (*P*<0.01). The parameters were reduced when SAH rats were injected with imatinib (*P*<0.01). Conclusion PDGFR may participate in the pathogenesis of early brain injury following SAH, and its antagonist imatinib can reduce brain injury to a certain degree.

参考文献/REFERENCES:

张光伟，贺学农，周昌龙，等· 血小板源性生长因子受体在实验性蛛网膜下腔出血后早期脑损伤中的作用[J]·第三军医大学学报,2013,35(13):1398-1401.

相似文献/REFERENCES:

[1]曾春,周帅,唐爽,等·载脂蛋白E与蛛网膜下腔出血后脑组织中内皮型一氧化氮合成酶表达的关系[J]·第三军医大学学报,2013,35(07):653.

Zeng Chun,Zhou Shuai,Tang Shuang,et al.Correlation of apoE with cerebral endothelial nitric oxide synthase after sub-arachnoid hemorrhage in mice[J].J Third Mil Med Univ,2013,35(13):653.

[2]金清东,林秋泉,陈志,等.EEG和rCBF监测在大鼠非开颅SAH模型中的应用[J]·第三军医大学学报,2007,29(13):1282.

JIN Qing-dong,LIN Qiu-quan,CHEN Zhi,et al.Application of EEG and rCBF in a non-craniotomy model of subarachnoid hemorrhage in rats[J].J Third Mil Med Univ,2007,29(13):1282.

[3]谢宗义,马颖,程远·大鼠蛛网膜下腔出血后血脑屏障通透性变化[J]·第三军医大学学报,2007,29(09):834.

XIE Zong-yi,MA Ying,CHENG Yuan.Changes of blood brain barrier permeability after experimental subarachnoid hemorrhage[J].J Third Mil Med Univ,2007,29(13):834.

[4]何欣,刘晓化,吕芙蓉.腰大池持续外引流术治疗蛛网膜下腔出血56例的临床分析[J].第三军医大学学报,2006,28(19):1934.

[5]陈军,孟晓红,宋利兵.Terson综合征1例[J].第三军医大学学报,2009,31(08):671.

[6]何朝晖,孙晓川,郭宗铎,等.实验性蛛网膜下腔出血大鼠儿茶酚胺氧位甲基转移酶表达的变化及意义[J].第三军医大学学报,2011,33(20):2157.

He Zhaohui,Sun Xiaochuan,Guo Zongduo,et al.Expression profile of catechol-O-methyltransferase in rats after subarachnoid hemorrhage[J].J Third Mil Med Univ,2011,33(13):2157.

[7]李平,杨福兵,耿保伟,等.自发性蛛网膜下腔出血首次CTA检查阴性31例分析[J].第三军医大学学报,2010,32(14):1573.

[8]陈慧,王健,董为伟,等.无创脑电阻抗测定动态监测蛛网膜下腔出血后脑水肿的临床研究[J].第三军医大学学报,2010,32(15):1656.

Chen Hui,Wang Jian,Dong Weiwei,et al.Application of noninvasive cerebral electrical impedance measurement in monitoring brain edema after subarachnoid hemorrhage: report of 46 cases[J].J Third Mil Med Univ,2010,32(13):1656.

[9]张建忠,周政,刘俊,等.NF-κB在兔蛛网膜下腔出血模型基底动脉中的表达及其与血管平滑肌增殖的关系[J].第三