

## 74例急性脑卒中合并糖代谢异常患者治疗及预后的前瞻性研究

吴艳巧<sup>1</sup> 严莉<sup>2</sup> 刘尊敬<sup>2</sup> 任丽<sup>3</sup>

(1 中国石油勘探开发研究院卫生所内科 北京 100083 2 北京中日友好医院神经内科 北京 100029;

3 天津市大港油田职工总医院内科 天津 300280)

**摘要** 目的 探讨急性脑卒中患者血糖代谢异常的治疗方法及其对预后的影响。方法 抽取我院于2010年1月-2011年10月收治的74例急性脑卒中血糖代谢异常患者,按照入院时间先后将其分为对照组和实验组,其中对照组34例给予常规溶栓抗凝和抗血小板治疗,实验组40例给予胰岛素联合溶栓抗凝和抗血小板综合治疗。对所有患者进行1-2个月的随访,对比两组患者的临床疗效和空腹血糖变化。结果 两组间治疗前相比,空腹血糖值差异无统计学意义( $P>0.05$ );两组间治疗后相比,实验组患者的空腹血糖值( $5.76\pm 1.09$ )低于对照组( $9.36\pm 1.66$ ),比较差异有统计学意义( $P<0.05$ )。两组间相比,实验组患者的总有效率为97.5%,高于对照组的88.2%,统计学差异有意义( $P<0.05$ )。实验组患者神经功能缺损评分(NDS)为 $39.4\pm 2.4$ 、格拉斯哥昏迷评分(GCS)为 $9.2\pm 1.6$ 和日常生活活动能力(ADL)为 $5.4\pm 1.2$ 均高于对照组( $27.7\pm 1.4, 6.4\pm 1.2, 3.8\pm 1.3$ ),比较差异有统计学意义( $P<0.05$ )。结论 运用诺和灵、血栓通、奥扎格雷联合治疗急性脑卒中合并血糖代谢异常,可有效地改善患者的血糖变化和脑部功能。

**关键词** 急性脑卒中;血糖代谢异常;前瞻性研究

中图分类号 R743 文献标识码 A 文章编号 1673-6273(2012)26-5091-03

## The Prospective Study on Treatment and Prognosis of 74 Cases of Patients with Acute Stroke and Blood Sugar Metabolism Anomalies Complication\*

WU Yan-qiao<sup>1</sup>, YAN Li<sup>2</sup>, LIU Zun-jing<sup>2</sup>, REN Li<sup>3</sup>

(1 Internal Medical Clinic of China Petroleum Exploration and Development Research Institute, Beijing, 100083, China;

2 Neurology Department of Beijing Sino-Japanese Friendship Hospital, Beijing, 100029, China;

3 Third Internal Department of Tianjin Dagang Oilfield Workers' General Hospital, Tianjin, 300280, China)

**ABSTRACT Objective:** To study the therapeutic method for patients with acute stroke and blood sugar metabolism anomalies and its effect on prognosis. **Methods:** From March 2011 to January 2012, 74 cases of patients with acute stroke and secondary glucose metabolism abnormal in our hospital were selected as the object of study. According to the in-hospital time order, all patients were divided into the control group and the experimental group. 34 patients in the control group were given conventional treatments, and 40 patients in the experimental group were given the novolin, Xueshuantong injection and ozagrel combination therapy. After 1 to 2 months of follow-up for all patients, we compared the clinical curative effect and the fasting blood sugar changes of the two groups. **Results:** Before treatment, the fasting blood sugar value showed no statistically significant differences between the two groups ( $p>0.05$ ); After treatment, the fasting blood sugar value of the experimental group ( $5.76\pm 1.09$ ) was lower than those of the control group ( $9.36\pm 1.66$ ), with statistically significant difference ( $P<0.05$ ). Between the two groups, the total effective rate of the experimental group was 97.5%, which was higher than those in the control group (88.2%); the difference was statistically significant ( $P<0.05$ ). Of the experimental group, the neural function defect score (NDS) was  $39.4\pm 2.4$ , Glasgow coma scale (GCS) was  $9.2\pm 1.6$  and daily life activities (ADL) was  $5.4\pm 1.2$ , all of which were higher than those in the control group ( $27.7\pm 1.4, 6.4\pm 1.2, 3.8\pm 1.3$  respectively); the difference were statistically significant ( $P<0.05$ ). **Conclusion:** The novolin, Xueshuantong injection and ozagrel combination therapy for acute stroke combined with glucose metabolism abnormal can effectively improve the blood sugar metabolism change and brain function.

**Key words:** Acute stroke; Blood glucose metabolic abnormalities; Prospective study

**Chinese Library Classification:** R743 **Document code:** A

**Article ID:** 1673-6273(2012)26-5091-03

### 前言

目前,越来越多的学者已逐渐赞同糖尿病是缺血性脑血管病的高危因素之一,而高血糖状态下对缺血性脑血管病的病情及预后影响均十分不利。一般情况下,血糖升高经常存在于脑

卒中患者急性期,此时约60%的患者存在高血糖<sup>[1]</sup>。以往的观点认为急性脑卒中后并发高血糖是一种机体应激反应,而近年来的主流观点则认为其是糖尿病及糖耐量异常的临床表现<sup>[2]</sup>。因此,重视急性脑卒中患者血糖代谢异常的预防和治疗对患者的预后具有重要意义。溶栓抗凝和抗血小板是急性脑卒中的常规治疗,笔者比较了胰岛素联合溶栓抗凝和抗血小板综合治疗与常规治疗在急性脑卒中患者的治疗及预后方面的不同,现报道如下。

**作者简介:** 吴艳巧(1968-),女,本科,主治医师,主要研究方向:内科学。E-mail: wuyanqiao000@sina.com

(收稿日期:2012-04-11 接受日期:2012-05-05)

## 1 对象与方法

### 1.1 对象

对我院于 2010 年 1 月 -2011 年 10 月收治的 74 例急性脑卒中血糖代谢异常患者(所有患者均符合全国第四届脑血管病学术会议修订的诊断标准,并经头颅 CT 或 MRI 检查证实)的临床资料进行回顾性分析。其中男性 41 例,女性 33 例,年龄 54-82 岁,平均年龄(67.6± 8.3)岁。按照入院时间先后将其分为对照组和实验组,其中对照组 34 例给予常规溶栓抗凝和抗血小板治疗,实验组 40 例行胰岛素联合溶栓抗凝和抗血小板综合治疗。详细向所有患者介绍治疗的过程及其注意事项,并签署知情同意书。

### 1.2 治疗方法

对照组给予常规溶栓抗凝和抗血小板治疗,血栓通 300 mg 奥扎格雷钠 80 mg,分别加入 5%葡萄糖或 0.9 氯化钠溶液内静脉滴注,每天 2 次,并维护酸碱平衡及防止水电解质代谢紊乱等。实验组给予胰岛素联合溶栓抗凝和抗血小板综合治疗,即血栓通 300mg 和奥扎格雷钠 80 mg 加入 5%葡萄糖或 0.9 氯化钠溶液 300 ml 内静脉滴注,每天 2 次。诺和灵于饭前 30 min 注射,剂量须因人而异,中型病例开始 4~12U/次,重型病例则 12~24U/次。两组患者均以 14 d 为 1 个疗程。

### 1.3 疗效判断

对所有患者进行 1-2 个月的随访,平均随访时间(1.5± 0.2)月,采用患者定期回院复查的方式,对比两组患者的临床疗效[总有效率=(显效+有效)/(显效+有效+无效)]<sup>[3]</sup>和空

腹血糖<sup>[4]</sup>变化。临床标准结合本院自制的判断标准,即显效:患者功能缺损评分减少 60%-100%,病残程度为 0-1 级;有效:功能缺损评分减少 30%-60%,病残程度为 2-3 级;无效:患者上述指标未好转或有恶化趋势。

### 1.4 预后指标评判

预后指标包括:①神经功能缺损评分(NDS);②格拉斯哥昏迷评分(GCS);③日常生活活动能力(ADL)评估。采用改良的 Barthel 指数,测试内容分 10 项,分别为尿、便、修饰、用厕、吃饭、转移(床→椅)、活动(步行)、穿衣、上楼梯、洗澡,分值越高代表日常生活能力越好。

### 1.5 统计学处理

采用统计学软件 SPSS17.0 进行数据处理,计数资料以百分率表示,计量资料以  $\bar{x} \pm s$  表示,组间比较应用 t 检验和卡方检验,以  $P < 0.05$  为差异有统计学意义。

## 2 结果

### 2.1 治疗后两组患者的空腹血糖对比

两组间治疗前相比,空腹血糖值差异无统计学意义( $P > 0.05$ ),两组间治疗后相比,实验组患者的空腹血糖值( $5.76 \pm 1.09$ )低于对照组( $9.36 \pm 1.66$ ),比较差异有统计学意义( $P < 0.05$ )(表 1)。

### 2.2 治疗后两组患者总有效率对比

两组间相比,实验组患者的总有效率为 97.5%,高于对照组的 88.2%,统计学差异有意义( $P < 0.05$ )(表 2)。

表 1 治疗后两组患者的空腹血糖对比

Table 1 The contrast of fasting blood glucose after treatment between the two groups

组别 Group	Cases	治疗前(mmol/l) Before treatment	治疗后(mmol/l) After treatment
实验组 The experimental group	40	14.17± 3.17*#	5.76± 1.09
对照组 The control group	34	14.42± 2.92*#	9.36± 1.66
T 值 T value		0.04	5.82
P 值 P value		>0.05	<0.05

注: \* 空腹血糖值无统计学差异( $P > 0.05$ ) # 实验组低于对照组( $P < 0.05$ )。

Note: \* represents there was no statistical differences in fasting blood glucose( $P > 0.05$ ),

# represents the level of experimental group was lower than that of the control group( $P < 0.05$ ).

### 2.3 治疗后两组患者预后的影响

实验组患者神经功能缺损评分(NDS)为  $39.4 \pm 2.4$ 、格拉斯哥昏迷评分(GCS)为  $9.2 \pm 1.6$  和日常生活活动能力(ADL)为

$5.4 \pm 1.2$  均高于对照组( $27.7 \pm 1.4$ 、 $6.4 \pm 1.2$ 、 $3.8 \pm 1.3$ ),比较差异有统计学意义( $P < 0.05$ )(表 3)。

表 2 两组患者治疗后临床疗效变化对比

Table 2 The contrast of the clinical curative effect change after treatment, of the two groups

Groups	Cases	Excellent		Effective		Invalid		Total effective rate	
		Cases	Percentage	Cases	Percentage	Cases	Percentage	Cases	Percentage
Experimental group	40	30	75.0	8	20.0	2	5.0	38	95.0
Control group	38	25	65.7	8	21.1	5	13.2	33	86.8

\* Note: After treatment, patients in experimental group had a higher total effective rate than the control group( $P < 0.05$ ).

## 3 讨论

急性脑卒中发生后病变部位脑组织水肿, 双侧大脑半球压

力不平衡, 可能导致中线结构移位, 从而对下丘脑-垂体-靶腺轴产生刺激, 导致交感-肾上腺系统功能亢进<sup>[9]</sup>, 胰高血糖素等血糖调节激素分泌增加, 最终导致血糖代谢异常血糖升高<sup>[6]</sup>。另

表 3 两组患者预后比较( $\bar{x} \pm s$ )Table 3 The contrast of prognosis between two groups ( $\bar{x} \pm s$ )

Groups	NDS	GCS	ADL
Experimental group	39.4 $\pm$ 2.4	9.2 $\pm$ 1.6	5.4 $\pm$ 1.2
Control group	27.7 $\pm$ 1.4	6.4 $\pm$ 1.2	3.8 $\pm$ 1.3

外, 笔者认为脑血管病急性期的患者存在胰岛素抵抗, 这也是糖代谢异常的机制之一<sup>[7]</sup>。尽管目前对急性脑卒中糖代谢异常的机制尚未完全明确, 但高血糖可导致氧自由基生成增加, 加重脑组织损害, 进而影响到脑卒中患者的预后<sup>[8]</sup>。而且无论是出血性还是缺血性脑卒中, 血糖水平与病情程度呈正相关。

作为脑血管疾病的常见独立危险因素, 急性脑卒中合并糖尿病常预后较差。且由于大多数 2 型糖尿病患者临床症状常不明显, 常因伴发症或并发症发生而致就诊时发现。目前, 如若对于急性脑卒中血糖代谢异常患者实施早期发现、早期干预性治疗常可改善患者的临床症状, 延长其生存期, 提高生活质量<sup>[9,10]</sup>。溶栓抗凝和抗血小板是急性脑卒中的常规治疗<sup>[11]</sup>, 血栓通具有活血化瘀、通脉活络、抑制血小板聚集、降低血黏度的作用, 使血栓溶解并抑制其形成<sup>[12,13]</sup>; 奥扎格雷可抑制 TXA<sub>2</sub> 合成酶, 具有抗血小板聚集和解除血管痉挛的作用<sup>[14]</sup>, 二者联用可增加脑血流量, 减少脑组织缺血缺氧, 对缺血、缺氧造成的脑血管调节功能障碍有较好地改善作用, 可改善脑组织因缺血而引起的脑能量耗竭, 有助于脑梗死后神经功能及时恢复<sup>[15]</sup>。诺和灵可调节糖谢, 促进葡萄糖透过细胞膜进入细胞, 促使组织中葡萄糖的氧化分解、糖元合成和转变为脂肪、氨基酸, 抑制肝糖元分解和糖元异生, 从而使血糖降低。主要用于各型糖尿病、糖尿病酮症、酸血症及糖尿病昏迷<sup>[16]</sup>。本研究两组间治疗后相比, 所有患者空腹血糖值均有所改善 ( $P < 0.05$ ), 但实验组低于对照组 ( $P < 0.05$ ), 与 Harati 等研究结果基本一致<sup>[17]</sup>。这表明诺和灵、血栓通、奥扎格雷联合治疗具有抗血小板聚集、抑制血栓形成、扩张血管的功效, 有利于改善患者的空腹血糖含量。而本研究中两组间相比, 实验组患者的总有效率为 97.5%, 高于对照组的 88.2% ( $P < 0.05$ )。这说明患者在糖代谢异常得到改善后, 脑功能缺损评分已得到相应的提高, 病残程度亦降低。国内的刘成国等研究认为<sup>[18]</sup>, 急性缺血性脑卒中后高血糖患者大多存在应激反应, 且表现为糖代谢异常, 而患者的糖代谢状态又与神经功能恢复密切相关。研究发现缺血性脑卒中患者中  $\geq 60\%$  常合并糖代谢异常, 因此在临床上对脑血管疾病进行诊治时, 医务人员应更多地关注缺血性脑卒中患者的糖代谢状态, 从而制定合理的全面的疾病管理策略与治疗计划。

综上所述, 运用诺和灵、血栓通、奥扎格雷联合治疗急性脑卒中合并血糖代谢异常, 临床效果显著, 并能通过一系列生理作用, 有效地改善患者的血糖变化, 对脑部功能和糖代谢起到有效地治疗和保护作用。

## 参考文献 (References)

[1] 雷燕. 中西医结合推进冠心病血糖的防治[J]. 中西医结合心脑血管

病杂志, 2007, 5(11): 1118-1119

Lei Yan. Combine traditional Chinese and western medicine propel the prevention and control of blood sugar of coronary heart disease[J]. J hypertension, sleep med, 2007, 5(11): 1118-1119

[2] Janocha A, Bolanowski M, Pilecki W, et al. Cognitive disorders in type-diabetic patients with recognized depression [J]. Neuro Endocrinol Lett, 2010, 31 (3): 3991

[3] Liu Xiao-jun, Liao Yi-gang, Mao Zheng-kang, et al. Detection of serum troponin-T in patients with acute ischemic stroke and its clinical significance [J]. Progress in Modern Biomedicine, 2010, 10 (7): 1336-1338

[4] Chen Yong-fu, Wang Lu-ya, Lu Shu-zheng, et al. Advances on Medication for Vulnerable Plaque of Atherosclerosis [J]. Progress in Modern Biomedicine, 2008, 8(8): 1599-1603

[5] 徐远溪, 魏毅东, 胡大一. 代谢综合征患者糖代谢异常与心脑血管事件关系的研究[J]. 中国综合临床, 2007, 23(4): 310-312

Xu Yuan-xi, Wei Yi-dong, Hu Da-yi. The relationship between sugar metabolism disorders of metabolic syndrome patients and cardio-cerebrovascular events [J]. China integrated clinical, 2007, 23(4): 310-312

[6] Yang Ping-hua, Zhu Li-jing, Huang Jian, et al. The influence of the blood glucose level of acute ischemic stroke on the phase and prognosis of disease [J]. Stroke, China, 2009, (5): 390-395

[7] Vizoli L, Muscari S, Muscari A. The relationship of mean platelet volume with the risk and prognosis of cardiovascular diseases [J]. Int J Clin Pract, 2009, 63(10): 1509-1515

[8] Li Fang-xue. The clinical significance of blood sugar and lipid levels detection in patients with acute stroke stage [J]. Medical test, 2008, 36 (30): 85-86

[9] Lv Cai-mo. Clinical application of aspirin in treatment of atherosclerotic cardiovascular diseases [J]. Progress in Modern Biomedicine, 2008, 8(10): 1959-1962

[10] Tan Gui-yan, Qian Zhao-xin. The clinical observation of aspirin joint slow-soluble dipyridamole to prevent cerebral ischemic events after acute ischemic stroke [J]. Modern biomedical progress, 2009, 9(14): 2691-2693

[11] 李勇, 胡小平, 钟华, 等. 依达拉奉联合血栓通治疗高血压脑出血疗效观察[J]. 现代生物医学进展, 2012, 12(5): 938-941

Li Yong, Hu Xiao-ping, Zhong hua, et al. The clinical observation of edaravone joint Xueshuantong treatment for the hypertension intracerebral hemorrhage [J]. Modern biomedical progress, 2012, 12 (5): 938-941

(下转第 5112 页)

- [12] Stecyk JA, Bock C, Overgaard J, et al. Correlation of cardiac performance with cellular energetic components in the oxygen-deprived turtle heart [J]. *Am J Physiol Regul Integr Comp Physiol*, 2009, 297(3):R756-768
- [13] Kapur S, Wasserstrom JA, Kelly JE, et al. Acidosis and ischemia increase cellular  $\text{Ca}^{2+}$  transient alternans and repolarization alternans susceptibility in the intact rat heart [J]. *Am J Physiol Heart Circ Physiol*, 2009, 296(5):H1491-512
- [14] Dargis R, Pearlstone JR, Barrette-Ng I. Single Mutation (A162H) in Human Cardiac Troponin I Corrects Acid pH Sensitivity of  $\text{Ca}^{2+}$ -regulated Actomyosin S1 ATPase[J]. *Biol Chem*, 2002, 277(38):34662-34665
- [15] 陈炜,孙勇伟,吴志勇. 半肝血流阻断在肝硬化肝癌半肝切除术中的意义[J]. *肝胆外科杂志*, 2005, 13(8):260-262
- Chen Wei, Sun Yong-wei, Wu Zhi-yong. Significance of Hemihepatic Vascular Control in Hemihepatectomy for Hepatocarcinoma Patients with Cirrhosis [J]. *Journal of Hepatobiliary Surgery*, 2005, 13(8): 260-262
- [16] Figueras J, Llado L, Ruiz D. Complete versus selective portal triad clamping for minor liver resections: a prospective randomized trial[J]. *Ann Surg*, 2005, 241(4):582-590
- [17] 杨鹏, 秦磊, 钱海鑫. 选择性半肝血流阻断在肝癌半肝切除术中的应用[J]. *浙江临床医学*, 2010, 03: 237-239
- Yang Peng, Qin Lei, Qian Hai-xin. Clinical application of hemihepatic vascular control in hemihepatectomy for hepatoma [J]. *Zhejiang Clinical Medical Journal*, 2010, 03: 237-239
- [18] 严律南. 肝脏外科[M]. 北京: 人民卫生出版社, 2001: 28229
- Yan Lv-nan. Liver surgery [M]. Bei Jing: people health press, 2001: 28229

(上接第 5093 页)

- [12] Zhao Jun-ying, Wang Gai-feng, Liu Zhi-hua. Clinical observation on the treatment of subacute stage of hypertensive cerebral hemorrhage with Xueshuantong injection [J]. *Chinese Journal of Hospital Pharmacy*, 2009, 29(19): 1655-1657
- [13] 张湘辉, 胡萌, 谭胜平, 等. 高压氧联合依达拉奉? 奥扎格雷钠治疗急性脑梗死的疗效观察 [J]. *现代生物医学进展*, 2011, 11(15): 2938-2941
- Zhang Xiang-Hui, Hu Meng, Tan Sheng-ping, et al. The curative effect observation of hyperbaric oxygen joint edaravone and ozagrel treatment for the acute cerebral infarction [J]. *Modern biomedical progress*, 2011, 11(15): 2938-2941
- [14] Chang Bao-qiang, Ma Ling-qiu, Li Xia. The combination effect of sodium ozagrel and aspirin on plasma level of lysophosphatidic acid and acidic phosphatids in patients with acute cerebral infarction[J]. *Chinese Journal of Neuroimmunology and Neurology*, 2008, 15(3): 484-486
- [15] Sung SF, Ong CT, Wu CS, et al. Increased use of thrombolytic therapy and shortening of in-hospital delays following acute ischemic stroke: experience on the establishment of a primary stroke center at a community hospital [J]. *Acta Neurol Taiwan*, 2010, 19(4):246-252
- [16] Yi Shan-qing, Jiang Bo-tao, Wu Heng. Effect of early rehabilitative training on cerebral hemorrhage[J]. *Progress in Modern Biomedicine*, 2008, 8(4):792-793
- [17] Harati H, Hadaegh F, Momenan AA, et al. Reduction in incidence of type 2 diabetes by lifestyle intervention in a middle eastern community[J]. *Am J Prev Med*, 2010, 38(6): 628-636
- [18] Liu Cheng-guo, Ruan Lian-sheng, Zheng Hai-bin, et al. The influence of body fat distribution types and insulin resistance on the risk factors clustering of cardiovascular disease [J]. *China journal of clinical care*, 2008, 11(5):481