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论著

## 不同再灌注方法对 STEMI 患者的疗效比较

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**摘要** 目的:比较不同急性 ST 段抬高型心肌梗死(STEMI)患者静脉溶栓治疗、溶栓成功后延迟经皮冠状动脉介入(PCI)治疗、直接 PCI(PPCI)治疗的临床疗效及近期预后。方法:入选符合入组标准的 218 例 STEMI 患者。根据患者就诊时间及治疗的实际情况分组:A 组即 PPCI 治疗(90 例);B 组即只进行静脉溶栓治疗(78 例),将发病 3 h 内溶栓的患者分为 B1 组(30 例),超过 3 h 分为 B2 组(48 例);C 组即溶栓成功后延迟 PCI 治疗组(50 例)。支架及用药方法:A 组、C 组患者罪犯血管是 PCI 治疗的唯一目标,不限制支架的应用与选择。3 组患者治疗方案均遵循 STEMI 治疗指南。随访指标:218 例患者均在术后 30 d 接受门诊随访。比较住院和随访期间的心脏事件(MACE 事件)、复合终点事件和心脏彩超[左室射血分数(LVEF)、左室舒张末径(LVEDD)]变化。结果:218 例患者均进入结果分析。(1)各组患者间基线资料和临床资料比较差异均无统计学意义,各组间具有可比性;(2)随访期间 MACE 事件及复合终点事件发生率:A 组低于 B2 组、C 组,差异有统计学意义( $P<0.05$ )。(3)随访期间 A 组 LVEF 高于 B2 组、C 组,C 组 LVEF 高于 B2 组;A 组 LVEDD 低于 B2 组、C 组,C 组 LVEDD 低于 B2 组,比较差异有统计学意义( $P<0.05$ )。结论:直接 PCI 是 STEMI 患者最有效的再灌注治疗方法;发病 3 h 内的患者,溶栓治疗的即刻效果及 30 d 预后不劣于直接 PCI。溶栓治疗并不是 STEMI 患者的治疗终点。

**关键词** 经皮冠状动脉介入治疗;静脉溶栓;急性 ST 段抬高型心肌梗死

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## Comparison of different reperfusion methods in patients with STEMI

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**Abstract Objective:** To compare the clinical effectiveness and prognosis of different acute ST elevated myocardial infarction (STEMI) patients by intravenous thrombolytic therapy, percutaneous coronary intervention (PCI) treatment after thrombolytic and direct PCI (PPCI) treatment. **Methods:** Two hundred and eighteen STEMI patients were selected. Basing on the treatment time and condition, the patients were divided into three groups. Group A was treated with PPCI (90 cases), Group B with intravenous thrombolytic therapy (78 cases), and were further divided into B1 group (30 cases) where patients were thrombolytic within 3 h and B2 group (48 cases) with more than 3 h. Group C (50 cases) were treated with delayed PCI after thrombolytic. Stent and treatment methods: Arteries of patients in Group A and C were the only goal for PCI treatment, without limiting the application and selection of stent. The treatment scheme of 3 groups had all followed STEMI guidelines. Follow-up indicators included MACE, composite end point event, LVEF and LVEDD. All of postoperative patients accepted the outpatient follow-up within 30 days. Differences between hospitalization and follow-up period in MACE, composite end point event, LVEF and LVEDD indicators were compared. **Results:** The result analysis included all patients. (1) There were no statistical differences between the groups in terms of the patients' baseline data and clinical data. (2) The incidence of MACE and composite end point event during the follow-up period: Group A was lower than Group B2 and Group C. The difference was statistically significant ( $P<0.05$ ). (3) During the follow-up period, the LVEF indicator for Group A was higher than Group B2 and Group C, the LVEF indicator for Group C was higher than Group B2, the LVEDD indicator for Group A was lower than Group B2 and Group C, and the LVEDD indicator for Group C was lower than Group B2. The difference was statistically significant ( $P<0.05$ ). **Conclusion:** Direct PCI may be the most effective method of reperfusion therapy for patients with STEMI. As for the patients within 3 hours, thrombolytic therapy method is not inferior to the direct PCI in terms of immediate effect and prognosis of 30 days. As for the patients with STEMI, thrombolytic therapy may not be the final answer.

**Key words** percutaneous coronary intervention; intravenous thrombolytic therapy; acute ST elevated myocardial infarction



2.3 各组住院及随访期间的指标 见表2。A组和C组术后均达到心肌梗死溶栓治疗临床试验前向血流3级,术中无死亡和心肌再梗死。各组间分别比较平均住院时间、住院费用及再通率:A组与B1组比较差异无统计学意义( $P>0.05$ );A组、B1组住院时间短于B2组、C组,C组短于B2组;A组、B1组住院费用低于B2、C组,差异有统计学意义( $P<0.05$ );

A组、B1组再通率高B2组、C组,C组高于B2组,差异有统计学意义( $P<0.05$ );随访期间MACE事件及复合终点事件发生率:A组与B1组比较差异无统计学意义( $P>0.05$ );A组、B1组低于B2组、C组,C组低于B2组,差异有统计学意义( $P<0.05$ )。

2.4 各组住院期间及随访期间的超声心动结果 见表3。

表2 各组住院及随访期间的随访指标

Tab 2 Indexes of all groups in hospital and follow-up visit

		住院期间						随访期间					
组别	n	平均住院	平均住院	MACE 事件/n(%)		复合终点事件/n(%)		MACE 事件/n(%)		复合终点事件/n(%)			
		时间	费用	TIMI3 级/	心血管	脑卒中	不稳定	心力	心血管	脑卒中	不稳定	心力	
		( $\bar{x}\pm s$ , d)	( $\bar{x}\pm s$ , 元)	n(%)	死亡	或再梗	心绞痛	衰竭	死亡	或再梗	心绞痛	衰竭	
A 组	90	12.2±5.6	40627.3±2598.1 <sup>ab</sup>	90(100) <sup>ab</sup>	0(0)	0(0)	3(3.3)	3(3.3)	0(0)	0(0)	2(2.2)	1(1.1)	
B 组	B1 组	30	12.4±4.6	40582.0±3280.0 <sup>ab</sup>	28(93.3) <sup>ab</sup>	0(0)	0(0)	1(3.3)	1(3.3)	0(0)	0(0)	2(6.7)	1(3.3)
	B2 组	48	13.2±5.2	45682.4±2357.9	27(56.25)	0(0)	0(0)	5(10.4)	2(4.2)	1(2.1)	0(0)	6(12.5)	8(6.3)
C 组	50	13.8±5.6	46045.2±2085.9	38(76) <sup>a</sup>	0(0)	0(0)	5(10.0)	2(4.0)	0(0)	0(0)	4(8.0)	2(4.0)	

与B2组比较<sup>a</sup> $P<0.05$ ,与C组比较<sup>b</sup> $P<0.05$

表3 各组住院期间及随访期间的超声心动结果( $\bar{x}\pm s$ )

Tab 3 Echocardiography results during hospitalization and follow-up period( $\bar{x}\pm s$ )

组别	n	住院期间		随访期间	
		LVEDD/	LVEF/	LVEDD/	LVEF/
		mm	%	mm	%
A 组	90	50.3±6.4	52.1±7.0	49.8±5.6 <sup>ab</sup>	56.4±6.5 <sup>ab</sup>
B 组 B1 组	30	50.6±5.1	54.8±7.2	50.1±5.0 <sup>ab</sup>	56.8±6.4 <sup>ab</sup>
B2 组	48	53.6±5.1	50.6±7.2	54.5±6.2	50.8±6.9
C 组	50	52.8±5.4	53.0±6.9	51.9±6.4	53.4±5.7 <sup>a</sup>

与B2组相比<sup>a</sup> $P<0.05$ ,与C组比较<sup>b</sup> $P<0.05$

随访期间A组、B1组LVEF高于B2组、C组,C组LVEF高于B2组;A组与B1组LVEF比较差异无统计学意义( $P>0.05$ );A组LVEDD低于B2组、C组,C组LVEDD低于B2组,比较差异有统计学意义( $P<0.05$ ),A组与B1组LVEDD比较差异无统计学意义( $P>0.05$ )。

### 3 讨论

急性心肌梗死患者早期、快速、完全地开通梗死相关血管(infarction related artery, IRA),从而挽救濒死心肌,缩小梗死面积,降低死亡率,是改善预后的关键<sup>[3-6]</sup>。急性STEMI患者再灌注治疗首选是直接PCI,因此直接PCI治疗越早进行,患者获益就越大,时间就是心肌,时间就是生命<sup>[7-8]</sup>。我院自建立标准化胸痛中心(chest pain center, CPC)以来,培训基层医师及时识别及诊断STEMI,利用远程实时传输

12导心电图,与周边基层医院建立区域协同救治网络,实现与院外120无缝链接,缩短FMC至球囊扩张(FMC-to-B)时间,减少了STEMI救治延迟现象,STEMI患者死亡率由5%下降到2.98%,提高了STEMI患者生存率。本文结果显示直接PCI治疗和3h内静脉溶栓治疗均能减少STEMI患者的住院天数,降低住院费用,减轻患者经济负担,并可减少STEMI患者30d随访期间的MACE事件及复合终点事件的发生,改善心功能,改善STEMI患者的预后,与国内外多个临床试验结果一致<sup>[9-11]</sup>。

虽然直接PCI能迅速、有效地开通STEMI患者的IRA,但是在发达国家如美国,也仅25%的患者能够及时接受PPCI治疗<sup>[12]</sup>。我国国内经济和医疗资源分布不均衡,大多数患者首次就诊于不能开展PCI的医院内,据《中国急性心肌梗死规范化救治项目》2010年的注册研究显示:登记STEMI患者64693例,占冠心病患者的28%,其中接受PPCI治疗患者比例仅为31%<sup>[13]</sup>。因此在不能行PPCI治疗医院,对于有溶栓适应征的STEMI患者,静脉溶栓仍是较好的选择<sup>[11,14-15]</sup>。本试验结果显示对于发病3h以内的患者,溶栓治疗与PPCI治疗即刻疗效及30d临床预后无显著差异,与指南结果一致<sup>[6]</sup>;C组患者随访的复合终点事件与B2组比较有显著差异( $P<0.05$ ),证明了溶栓并非STEMI治疗的终点,溶栓后的患者应尽快转运到PCI中心,以备必要时行PCI,这一结果与CARESS,TRANSFER-AMI以及NORDISTEMI等3



项研究<sup>[11-12,16]</sup>一致。

总之,若能同时满足时间、地点和急救医护人员技术等各项条件<sup>[2]</sup>,急性 STEMI 患者再灌注治疗首选策略应是 PPCI。对于不能及时接受 PPCI 的患者,院前给予溶栓治疗后,无论溶栓成功与否,立即转入行介入治疗的中心为最佳策略。但是,本研究有以下的局限性,一是采用的观察性研究非前瞻性研究,可能存在社会经济因素影响;二是病例数少、随访时间短,女性患者较少;三是冠状动脉病变的具体情况、直接 PCI 的具体操作细节以及所选用的支架类型等也可能影响分析的结果,上述患者长期预后的影响尚需进一步研究加以明确。

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