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不同途径行 PCI 治疗高龄冠心病患者的临床疗效和安全性比较 *

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摘要 目的:比较不同动脉途径行经皮冠状动脉介入(PCI)治疗高龄冠心病患者的临床疗效和安全性。**方法:**选取 214 例高龄冠心病患者,按动脉途径不同分为对照组(107 例)与研究组(107 例),对照组行经股动脉 PCI(TFI),研究组行经桡动脉 PCI(TRI),比较两组的手术情况、手术前后心功能相关指标的变化及不良反应的发生情况。**结果:**两组手术成功率、支架置入数量、造影剂用量比较无显著差异($P>0.05$);研究组动脉穿刺时间、导管插入时间、X 线曝光时间均显著长于对照组($P<0.05$),术后卧床时间、住院时间均显著少于对照组($P<0.05$)。手术后 1 d,两组左室收缩末期内径(LVESD)、左室舒张末期内径(LVEDD)、左心射血分数(LVEF)较术前均明显改善,但两组比较无显著性差异($P>0.05$)。研究组治疗期间外周血管并发症的发生率显著低于对照组($P<0.05$),但治疗期间及术后 6 个月心血管不良事件的发生率与对照组间无显著差异($P>0.05$)。**结论:**经桡动脉途径与股动脉 PCI 用于治疗高龄冠心病患者对患者心功能的改善作用相当,但经桡动脉行 PCI 术后卧床时间及住院时间较短,外周血管并发症的发生率较低,安全性更高。

关键词: 高龄冠心病; 股动脉; 桡动脉; 经皮冠状动脉介入

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Comparison of the Therapeutic Effect and Safety of Percutaneous Coronary Intervention via Different Arteries on the Elderly Patients with Coronary Artery Disease*

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ABSTRACT Objective: To compare the clinical efficacy and safety of different arterial approaches for percutaneous coronary intervention (PCI) in elderly patients with coronary heart disease. **Methods:** 214 elderly patients with coronary artery disease were selected and divided into the control group and the study group according to different arterial pathways with 107 cases in each group. The control group underwent transfemoral PCI (TFI) and the study group underwent transradial PCI (TRI). The operation conditions, changes of cardiac function related indicators before and after surgery and the incidence of adverse reactions were compared between the two groups. **Results:** There was no significant difference between the two groups in the success rate, the number of stents, and the amount of contrast agent ($P>0.05$). The arterial puncture time, catheter insertion time, and X-ray exposure time were significantly longer in the study group than those in the control group ($P<0.05$), and the bed rest time and length of stay were significantly shorter in the study group than those in the control group ($P<0.05$). The left ventricular end-systolic diameter (LVESD), left ventricular end-diastolic dimension (LVEDD) and left ventricular ejection fraction (LVEF) were significantly improved on the 1st day after surgery, but there was no significant difference between the two groups ($P>0.05$). The incidence of peripheral vascular complications during treatment was significantly lower in the study group than that in the control group ($P<0.05$), but there was no significant difference in the incidence of adverse cardiovascular events during the treatment period and at 6 months after surgery($P>0.05$). **Conclusions:** Radial artery approach and femoral PCI could improve the heart function in the treatment of elderly patients with coronary heart diseases, the time to stay in bed and the length of stay in the transradial artery after PCI were shorter, the incidence of peripheral vascular complications was lower and the safety was higher.

Key words: Elderly coronary heart disease; Femoral artery; Radial artery; Percutaneous coronary intervention

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前言

冠状动脉粥样硬化性心脏病是冠状动脉血管发生动脉粥样硬化病变而引起血管腔狭窄或阻塞,造成心肌缺血、缺氧或

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坏死而导致的心脏病,常常被称为冠心病^[12]。世界卫生组织将冠心病分为5大类:隐匿性冠心病、心绞痛、心肌梗死、缺血性心脏病和猝死,临床中常常分为稳定性冠心病和急性冠状动脉综合征^[3,4]。

经皮冠状动脉介入(PCI)是临床治疗冠心病的有效手段,具有创伤小、术后恢复快等优点,被临床广泛用于冠心病的治疗^[5,6]。近年来,随着我国逐渐步入老龄化社会,高龄(≥ 75 岁)冠心病患者的数量及行PCI治疗的频次均在逐年增加^[7,8]。以往临床上常通过股动脉途径行PCI(TFI)治疗,但有研究显示TFI穿刺后易导致出血不止等穿刺相关并发症及心血管不良事件^[9,10]。有研究^[11]表明选择桡动脉途径行PCI(TRI)治疗与TFI的手术效果相当,但TRI在减少并发症及心血管不良事件方面具有显著优势。高龄冠心病患者病情复杂多样,血管状况及耐受性常较差,部分患者通过TFI治疗效果常不理想^[12]。因此,本研究选取高龄冠心病患者为研究对象,探讨不同动脉途径行PCI治疗的临床效果,以期对高龄冠心病患者的临床治疗提供参考,现将结果报道如下。

1 资料与方法

1.1 病例资料

选取2014年1月至2017年6月我院收治的214例高龄冠心病患者,对其临床资料进行回顾性研究。按动脉途径不同分为对照组107例、研究组107例。对照组中,男60例,女47例;年龄75-90岁,平均 81.3 ± 3.5 岁;合并高血压33例,糖尿病31例,高脂血症24例,有PCI治疗史5例。研究组中,男58例,女49例;年龄76-89岁,平均 82.1 ± 3.4 岁;合并高血压34例,糖尿病33例,高脂血症23例,有PCI治疗史5例。两组一般资料比较无显著差异($P>0.05$),具有可比性。本研究已通过医院伦理委员会审批。

1.2 纳入及排除标准

纳入标准:有明显的心绞痛或心肌缺血症状,符合冠心病诊断标准^[13],患者已签知情同意书。排除标准:意识障碍;高血压无法控制;急性心肌梗死;严重的肝肾功能障碍;PCI治疗禁忌症;合并其他系统性疾病、髋关节异常;有严重出血及血栓病史、无法耐受抗凝治疗;造影剂过敏者。

1.3 治疗方法

对照组:行TFI治疗,患者取平卧位,以右侧腹股沟人带下动脉搏动最强处为穿刺点,采用2%利多卡因局麻,穿刺成功后,置入6F或7F动脉鞘,注入3000 U肝素,对患者行冠状动脉造影。PCI时,根据冠状动脉病变情况及造影时的操作情况,选择合适的导引导管、导引钢丝、球囊及支架。对只行冠脉造影者即刻拔出动脉鞘,局部按压止血30 min左右。待短暂松开无出血后,采用弹力绷带加压跨髌关节包扎,24 h后撤离绷带。行PCI治疗者,术后4-6 h根据活化部分凝血活酶时间(APTT)酌情拔管,局部按压止血30 min无出血后,使用弹力绷带进行加压包扎,24 h后撤离绷带。术后嘱患者绝对卧床12-24 h。

研究组:行TRI治疗,穿刺前患者行Allen试验,确认尺动脉和桡动脉侧枝循环良好。患者取平卧位,以桡骨茎突上1-3 cm搏动最强处作为穿刺点,2%利多卡因局麻,采用Cordis

桡动脉穿刺套装进行穿刺。穿刺成功后,放置6F桡动脉鞘管,将3000 U肝素、100-200 μ g硝酸甘油注入侧鞘,对患者行冠状动脉造影。PCI时,根据冠状动脉病变情况及造影时的操作情况,选择合适的导引导管及相关器材。术后即刻进行拔鞘,采用桡动脉压迫器对穿刺部位进行压迫止血,12 h后无出血时解除压迫。术后密切观察患者的生命体征,嘱患者术后72 h术肢不负重。如TRI穿刺,则转为TFI。

若术后通过冠脉造影显示靶血管病变残余狭窄 $>20\%$,则通过短球囊行支架内扩张;若影像学显示支架两端存在撕裂,则再置入1枚支架。

1.4 观察指标

(1)手术情况:比较手术成功率、支架置入数量、造影剂量、动脉穿刺时间、导管插入时间、X线曝光时间、术后卧床时间及住院时间。手术成功评价标准^[6]:靶血管病变残余狭窄 $<20\%$,远端前向心肌梗死溶栓治疗临床试验(TIMI)血流3级,无严重并发症发生。(2)心功能:比较两组手术前、手术后1 d左室收缩末期内径(LVESD)、左室舒张末期内径(LVEDD)、左心射血分数(LVEF)等心功能指标的变化。(3)不良反应:比较两组治疗期间外周血管并发症、心血管不良事件及术后6个月心血管不良事件的发生情况。

1.5 统计学方法

采用SPSS19.0软件建立Excel表格统计数据,计量资料及计数资料分别采用 $\bar{x} \pm s$ 或百分数(%)表示,组间比较分别行t检验或 χ^2 检验,以 $P<0.05$ 表示差异有统计学意义。

2 结果

2.1 两组的手术情况比较

两组手术成功率、支架数量、造影剂量比较差异无统计学意义($P>0.05$);研究组动脉穿刺时间、导管插入时间、X线曝光时间均显著长于对照组($P<0.05$),但术后卧床时间、住院时间均显著少于对照组($P<0.05$),见表1。

2.2 两组手术前后心功能指标的变化比较

手术后1 d,两组的LVEF、LVESD、LVEDD较手术前均明显改善,而两组比较无显著性差异($P>0.05$),见表2。

2.3 两组不良反应的发生情况比较

研究组治疗期间外周血管并发症的发生率为14.95%,显著低于对照组($P<0.05$),但治疗期间及术后6个月心血管不良事件的发生率与对照组间差异无统计学意义($P>0.05$),见表3。

3 讨论

冠心病患者临床中常表现出胸痛,常因体力活动、情绪激动等诱发,突感心前区疼痛,多为发作性绞痛或压榨痛,也可有憋闷感,胸痛也可出现在安静状态下或夜间,由冠脉痉挛所致,严重威胁患者的身心健康和生命安全^[14-16]。PCI是临床治疗冠心病的有效手段,其手术难度大、过程复杂且手术成功率及安全性随着患者年龄的增长而降低。因此,选择疗效确切、安全性高的介入途径一直是临床研究的热点^[17-19]。

目前,介入途径主要有TRI与TFI两种,其中股动脉解剖位置较桡动脉深,在行TFI治疗时可能损伤股静脉及股神经,从而引发一系列血管并发症、肺动脉栓塞等,导致预后不良^[20-22]。

表 1 两组手术情况比较($\bar{x} \pm s$)Table 1 Comparison of the operation situation between two groups ($\bar{x} \pm s$)

Items	Study group(n=107)	Control group(n=107)
Successful operation [n(%)]	104(97.20)	103(96.26)
Artery puncture time (min)	8.32± 2.14*	5.26± 1.47
Catheterization time (min)	3.22± 0.86*	2.21± 0.65
Stent placement number(n)	2.71± 0.58	2.65± 0.52
Contrast medium (ml)	208.15± 41.82	210.36± 40.18
X ray exposure time(min)	23.51± 5.08*	19.02± 5.63
Bed rest time after operation time(h)	4.06± 1.18*	20.63± 2.62
Hospital stays(d)	3.31± 0.67*	5.18± 0.75

Note: compared with control group, *P<0.05.

表 2 两组手术前后心功能指标的变化比较($\bar{x} \pm s$)Table 2 Comparison of the changes of heart function index before and after surgery between two groups ($\bar{x} \pm s$)

Group	Time	LVEF(%)	LVESD(mm)	LVEDD(mm)
Study group (n=107)	Before operation	48.63± 7.16	31.85± 8.45	48.62± 7.75
	1 d after operation	70.76± 5.37*	22.35± 5.62*	37.46± 6.25*
Control group (n=107)	Before operation	47.84± 6.78	31.97± 8.37	49.02± 8.14
	1 d after operation	69.72± 5.61*	21.81± 5.45*	38.11± 6.78*

Note: compared with control group, *P<0.05.

表 3 两组不良反应的发生情况比较[例(%)]

Table 3 Comparison of the incidence of adverse reactions between two groups[n(%)]

Group	n	Peripheral vascular complications during treatment	Major adverse cardiovascular events	
			During treatment	6 months after operation
Study group	107	16(14.95)*	2(1.87)	5(4.67)
Control group	107	28(26.17)	4(3.74)	6(5.61)

Note: compared with control group, *P<0.05.

另外,在 TFI 治疗后,患者需绝对卧床 12-24 h,在一定程度上增加了下肢静脉血栓的风险^[22]。TRI 具有术后压迫时间短、术后活动不受限、并发症少等优点,在一定程度上弥补了 TFI 的不足,缩短了患者的术后卧床时间及治疗周期,但手术难度较大,对术者技术要求较高^[23,24]。有研究显示 TRI 与 TFI 途径在高龄患者介入手术中的效果无显著性差异,但经桡动脉更换介入途径比例高于经股动脉^[25],分析原因可能与桡动脉痉挛的发生率较高有关,另外还与临床中反复交换导管、长时间介入操作等相关^[26]。因此,在选择 TRI 前,应全面评估患者桡动脉侧枝循环状态,适当给予提高血管活性药物。

本研究结果显示两组手术成功率、支架置入数量、造影剂用量间无显著差异,而研究组动脉穿刺时间、导管插入时间、X 线曝光时间均显著长于对照组,这可能与桡动脉相对细滑、难以固定,手术操作难度大有关,提示经桡动脉 PCI 对穿刺技术的要求更高^[27,28]。本研究中,研究组术后卧床时间、住院时间均显著少于对照组,与多数报道^[29,30]一致。经股动脉 PCI 患者在术后需要较长时间的卧床休息、局部制动,而桡动脉周围没有重要的血管神经伴行故无严格制动要求。因此,经桡动脉术后卧床时间远低于经股动脉,也说明经桡动脉 PCI 更利于患者的康

复。在安全性方面,研究组治疗期间外周血管并发症的发生率显著低于对照组,表明经桡动脉的安全性较经股动脉高,经股动脉术后的外周血管发生率较高,可能与股动脉解剖结构特殊、高龄患者股动脉血管弹性较差、拔管后增加了止血的难度、操作时股静脉/股神经易损伤及术后卧床时间过长有关^[31]。

综上所述,经桡动脉途径与股动脉 PCI 用于治疗高龄冠心病患者对患者心功能改善情况相当,但经桡动脉行 PCI 术后卧床时间及住院时间较短,外周血管并发症的发生率较低,安全性更高。

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