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不同动脉途径行经皮冠状动脉介入治疗高龄冠心病的临床疗效观察 *

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摘要 目的:探讨不同动脉途径行经皮冠状动脉介入治疗高龄冠心病的临床疗效和安全性。**方法:**选取 2014 年 1 月 ~2017 年 1 月我院收治的 265 例高龄冠心病患者为研究对象,根据就诊顺序将受试者分为对照组 132 例及研究组 133 例,对照组患者给予股动脉途径(TFI)行经皮冠状动脉介入治疗,研究组患者给予桡动脉途径(TRI)行经皮冠状动脉介入治疗,比较两组患者的手术情况、手术前后各心功能指标变化、心血管不良事件及并发症的发生情况。**结果:**两组患者的手术成功率、支架数量、造影剂用量比较差异无统计学意义(P＞0.05),但研究组患者动脉穿刺时间、导管插入时间及 X 线曝光时间均长于对照组,卧床时间及住院时间均明显短于对照组(P<0.05)。治疗后,两组患者的左心射血分数(LVEF)、左室收缩末期内径(LVESD)及左室舒张末期内径(LVEDD)较治疗前均明显改善,且研究组优于对照组(P＜0.05),研究组患者心血管不良事件发生率及各并发症发生率均显著低于对照组(P＜0.05)。**结论:**TRI 与 TFI 在经皮冠状动脉介入术治疗高龄冠心病患者的手术效果相当,但 TRI 在改善患者心功能、减少心血管不良事件的效果更好且安全性更高,可做为高龄冠心病患者 PCI 治疗的首选途径。

关键词:高龄冠心病;动脉途径;经皮冠状动脉介入治疗;心功能;心血管事件;并发症

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Observation on the Therapeutic Effect of Percutaneous Coronary Intervention on Coronary Artery Disease in Different Arteries*

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ABSTRACT Objective: To evaluate the clinical efficacy and safety of percutaneous coronary intervention in the treatment of elderly patients with coronary heart disease. **Methods:** 265 cases of elderly patients with coronary heart disease admitted in our hospital from January 2014 to January 2017 were selected as the subjects. According to the order of treatment, all patients were divided into the control group (132 cases) and the study group (133 cases). Patients in the control group underwent percutaneous coronary intervention with the femoral artery approach (TFI) and patients in the study group underwent percutaneous coronary intervention with the radial artery approach (TRI). The operation, changes of cardiac function indexes before and after surgery, incidence of cardiovascular adverse events and complications were compared between the two groups. **Results:** There was no significant difference in the success rate of surgery, the number of stent, contrast agent dosage between the two groups (P>0.05). However, the time of arterial puncture, the insertion time of the catheter and the time of X-ray exposure in the study group were all longer than those in the control group, and the bed time and the time of hospitalization were significantly shorter than those in the control group (P<0.05). After treatment, the left ventricular ejection fraction (LVEF), the left ventricular end systolic diameter (LVESD) and the left ventricular end diastolic diameter(LVEDD) were significantly improved than those before the treatment, which were better in the study group than those of the control group (P<0.05), the incidence of adverse cardiovascular events and complications in the study group were significantly lower than those in the control group (P<0.05). **Conclusion:** TRI and TFI were quite effective in the treatment of elderly patients with coronary heart disease by percutaneous coronary intervention, and TRI was better and safer in improving cardiac function and reducing cardiovascular adverse events. It could be used as the first choice for the treatment of PCI in elderly patients with coronary heart disease.

Key words: Elderly coronary heart disease; Arterial approach; Percutaneous coronary intervention; Cardiac function; Cardiovascular events; Complications

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前言

经皮冠状动脉介入 (Percutaneous coronary intervention,

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PCI)是临床治疗冠心病的有效手段,具有创伤性小、术后恢复快的优点,因而被临床广泛应用于冠心病的治疗[1-3]。近年来,随着我国逐渐步入老龄化社会,高龄(≥ 75 岁)冠心病患者的发生率逐年增长,行 PCI 治疗的频次也逐年增加。以往临床上常通过股动脉途径(TFI)行 PCI 治疗,随着医疗技术水平的提高及临床研究的不断深入,有研究表明股动脉位置较深,穿刺时易损伤股静脉及股神经而引发出血不止等一系列并发症及心血管不良事件,不利于患者术后康复[4-6]。随着 PCI 术的日趋成熟,有研究表明选择桡动脉途径(TRI)行 PCI 治疗与 TFI 手术效果相当,但可有效减少并发症及心血管不良事件,弥补 TFI 中的不足[7]。但也有研究显示对于伴有动脉硬化的严重患者,TRI 穿刺手术难度较大,风险性较高[8]。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[9]。目前,临床上对于如何选择有效的动脉途径行 PCI 术仍存在较大争议。因此,本研究选取 2014 年 1 月 ~2017 年 1 月我院收治的 265 例高龄冠心病为研究对象,探讨高龄冠心病不同动脉途径行 PCI 治疗的临床疗效,以期为临床提供参考,现报道如下。

1 材料与方法

1.1 一般资料

选取 2014 年 1 月 ~2017 年 1 月我院收治的 265 例高龄冠心病患者为研究对象,根据就诊顺序将受试者分为对照组 132 例及研究组 133 例,两组患者的基线资料经统计学分析无显著性差异(P> 0.05),具有可比性,见表 1。

表 1 两组一般资料的比较(n,$\bar{x}\pm s$)

Table 1 Comparison of the general data between two groups(n, $\bar{x}\pm s$)

Groups	Gender Male/female	Age (years)	Complication [n(%)]		
			Hypertension	Diabetes mellitus	Hyperlipemia
Control group(n=132)	72/60	81.32± 3.46	36(27.27)	47(35.61)	31(23.48)
Study group(n=133)	70/63	82.31± 3.37	42(31.58)	45(33.83)	34(25.56)

1.2 纳入及排除标准

①纳入标准:所有患者均伴有明显的心绞痛或心肌缺血症状,经影像学及冠状动脉造影检查符合《缺血性心脏病的命名及标准》及《中医病证诊断疗效标准》中冠心病相关的诊断标准[9-11],经医院伦理委员会批准同意,患者自愿签署知情同意书。年龄 75-90 岁。②排除标准:意识障碍、高血压无法控制者、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、伴有严重出血及血栓病史、无法耐受抗凝治疗及造影剂过敏者。

1.3 治疗方法

对照组患者给予股动脉途径(TFI)行经皮冠状动脉介入治疗,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%利多卡因局部麻醉后,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 时根据患者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髋关节包扎 24 h 后撤离绷带。行 PCI 治疗者术后 4-6 h 根据活化部分 APTT 酌情把关,局部按压止血 30 min 无出血后采用弹力绷带加压包扎,24 h 后撤离绷带。术后嘱患者需绝对卧床 12 h～24 h。研究组患者给予桡动脉途径(TRI)行经皮冠状动脉介入治疗,穿刺前患者均双手按压桡动脉和尺动脉,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,采用 2%利多卡因局部麻醉后,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 μg 硝酸甘油注入侧鞘,对患者行冠状动脉造影。PCI 时根据患者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,对于 TRI 穿刺失败者则转为 TFI。

1.4 观察指标

比较两组患者的手术情况、手术前后左室收缩末期内径(LVESD)、左室舒张末期内径(LVEDD)、左心射血分数(LVEF)等心功能指标变化、心血管不良事件及并发症发生率。手术成功评价标准[12-14]:靶血管病变残余狭窄在 20%以内,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。若术后靶血管病变残余狭窄 20%以上,则通过短球囊行支架内扩张,影像学显示若支架两端存在撕裂,则再置入 1 枚支架[15]。

1.5 统计学方法

采用 SPSS19.0 软件包,建立 Excel 表格统计数据,分别采用均数± 标准差($\bar{x}\pm s$)、百分数(%)表示计量资料及计数资料,组间比较行 t 检验及 x^2 检验,以 P<0.05 表示差异具有统计学意义。

2 结果

2.1 两组患者的手术情况比较

两组患者的手术成功率、支架数量、造影剂用量比较差异无统计学意义(P> 0.05),但研究组患者动脉穿刺时间、导管插入时间及 X 线曝光时间明显长于对照组,卧床时间及住院时间明显少于对照组(P<0.05),见表 2。

2.2 两组治疗前后心功能指标的变化比较

治疗后,两组患者的 LVEF、LVESD 及 LVEDD 均较治疗前均明显改善,且研究组优于对照组(P< 0.05),见表 3。

2.3 两组心血管不良事件发生情况的比较

对照组患者心血管不良事件发生率为 30.30%,而研究组患者心血管不良事件发生率为 6.02%,较对照组明显降低(P<

0.05),见表 4。

表 2 两组患者的手术情况比较

Table 2 Comparison of the surgical conditions between two groups

Group	Control group(n= 132)	Study group(n=133)	P
Operative successful rate n(%)	130(97.74)	128(96.97)	0.573
Arterial puncture time(min)	8.32± 3.14	5.26± 2.27	0.011
Catheter insertion time(min)	3.22± 2.96	2.21± 1.75	0.012
Number of stents	1.71± 0.98	1.65± 1.02	0.425
Dosage of contrast agent(mL)	209.65± 45.82	211.36± 40.18	0.425
X ray exposure time(min)	23.51± 15.08	19.02± 11.63	0.043
Bed time(d)	4.06± 1.68	20.83± 2.42	0.005
Hospital stay(d)	6.34± 2.57	11.28± 2.65	0.023

表 3 两组治疗前后心功能指标变化的比较($\bar{x}\pm s$)

Table 3 Comparison of the changes in cardiac function index between the two groups before and after treatment($\bar{x}\pm s$)

Groups		LVEF (%)	LVESD (mm)	LVEDD (mm)
Study group(n=133)	Before treatment	48.85± 7.26	31.91± 10.42	49.88± 8.21
	After treatment	71.31± 4.63▲*	22.29± 9.69▲*	36.77± 6.41▲*
Control group(n=132)	Before treatment	47.54± 6.38	32.12± 10.62	50.13± 8.32
	After treatment	59.21± 4.67▲	27.59± 10.19▲	40.28± 8.28▲

Note: compared with before treatment, ▲P<0.05; compared with control group, *P<0.05.

表 4 两组心血管不良事件发生情况的比较[例(%)]

Table 4 Comparison of the incidence of adverse cardiovascular events between two groups[n(%)]

Groups	NNT	Vasovagal reaction	Hemorrhage haematoma	Arteriovenous fistula	Epidermal tension blisters	Deep vein thrombus	Overall incidence
Study group	133	0	3(2.26)	0	5(3.76)	0	8(6.02)
Control group	132	6(4.55)	13(9.85)	3(2.27)	17(12.88)	1(0.76)	40(30.30)
P		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

2.4 两组并发症发生情况的比较

研究组患者腹胀、排尿困难、导尿、术中肢体疼痛、腰痛和失眠各并发症发生率均显著低于对照组(P< 0.05),见表 5。

表 5 两组并发症发生率[例(%)]

Table 5 Complications occurred in both groups[n(%)]

Groups	NNT	Bloating	Dysuria	Urethral catheterization	Intraoperative limb pain	Low back pain	Insomnia
Study group	133	0	3(2.26)	0	8(6.02)	0	14(10.53)
Control group	132	35(26.52)	43(32.58)	18(13.64)	31(23.48)	63(47.73)	48(36.36)
P		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

3 讨论

PCI 是指经导管技术对狭窄甚至闭塞的冠状动脉管腔进行扩张来改善心肌血氧供应的治疗方法,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[16]。目前,介入途径主要有 TRI 与 TFI 两种,股动脉解剖位置较桡动脉相对较深,且在行股动脉 PCI 治疗时其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[17,18]。另外,在股动脉 PCI 治疗后,患者需绝对卧床 12 h~24 h,在一定程度上增加了下肢静脉血栓的发生率[19]。桡动脉 PCI 治疗具有术后压迫时间短、术后活动不受限、并发症少的优点,在一定程度上弥补了股动脉 PCI 治疗中的不足,缩短了患者的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[20-22]。有

研究指出 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较股动脉显著增高[23]。分析其原因可能与桡动脉痉挛有关，因此在选择 TRI 途径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[24]。

本研究结果表明两组患者的手术成功率、支架数量、造影剂用量比较无显著性差异，提示经股动脉及桡动脉穿刺在高龄冠心病患者 PCI 治疗中的临床疗效相当，与巫颖等报道一致[25]。但研究组患者动脉穿刺时间、导管插入时间及 X 线曝光时间长于对照组，卧床时间及住院时间少于对照组，进一步说明经桡动脉穿刺术后压迫时间短、活动不受限的优点，有利于患者术后康复，但桡动脉相对细滑，难以固定，穿刺耗时较多，且对穿刺技术的要求更高[26-28]。另外，治疗后两组患者的 LVEF、LVESD 及 LVEDD 较治疗前均明显改善，且研究组优于对照组，研究组患者心血管不良事件发生率及各并发症发生率均显著低于对照组。其原因可能与股动脉解剖结构特殊，加之高龄患者股动脉血管弹性较差，拔管后增加了止血的难度，且在操作时易损伤股静脉及股神经，加之术后卧床时间较长，从而引发出血血肿、排尿困难、血管迷走反射、动静脉瘘等一些列不良事件[29,30]。

综上所述，TRI 与 TFI 在经皮冠状动脉介入术治疗高龄冠心病患者的手术效果相当，但 TRI 在改善患者心功能、减少心血管不良事件的效果更好且安全性更高，可做为高龄冠心病患者 PCI 治疗的首选途径。

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