

· 老年人冠心病介入治疗专栏 ·

老年女性无保护左主干病变患者经皮冠状动脉介入术的长期疗效观察

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【摘要】目的 探讨合并冠状动脉左主干(LMCA)病变老年女性患者经皮冠状动脉介入(PCI)术后的长期预后。**方法** 从1997年12月~2012年10月, 共有302例女性患者在我院首次行冠状动脉造影提示LMCA并行PCI, 其中 ≥ 65 岁的老年女性156例, 年龄(72.0 ± 4.31)岁; < 65 岁非老年女性146例, 年龄(55.5 ± 7.06)岁。两组成功PCI患者随访(42.0 ± 19.3)个月, 比较两组患者的临床基本特征、冠状动脉病变特点、PCI特点及随访结果。**结果** 老年组高血压和急性心肌梗死的比例较非老年组虽有增高的趋势, 但差异无统计学意义。老年组的Syntax评分明显高于非老年组[(26.6 ± 8.49) vs (23.5 ± 9.10), $P < 0.01$]。老年组与非老年组PCI成功率均为100%, 两组所采用手术术式、植入支架平均直径及长度, 以及药物洗脱支架的比例均无明显差异。与非老年组相比较, 老年组在总的主要不良心血管事件发生率、支架内血栓及全因死亡的发生率均无明显增加。**结论** 合并LMCA病变的老年女性患者接受PCI是安全的, 通过强化抗血小板治疗、选择合理的手术策略可改善其长期预后。

【关键词】 冠状动脉疾病; 左主干; 经皮冠状动脉介入; 女性; 老年人

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Percutaneous coronary intervention for unprotected left main coronary artery disease in old females: a long-term study on clinical efficiency

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【Abstract】Objective To investigate the long-term outcomes of percutaneous coronary intervention (PCI) in the old female patients with left main coronary artery (LMCA) disease. **Methods** A total of 302 female patients with LMCA disease who underwent PCI in our department from December 1997 to October 2012 were enrolled and retrospectively analyzed in this study. They were divided into the old group [≥ 65 years, with age of (72.0 ± 4.31) years, $n = 156$] and non-old group [< 65 years, with age of (55.5 ± 7.06) years, $n = 146$]. The time of follow-up was (42.0 ± 19.3) months in both groups after successful angioplasty. The basic clinical and angiographic characteristics, immediate results of PCI and major adverse cardiac event (MACE) defined as target vessel revascularization, acute myocardial infarction, and sudden cardiac death were analyzed between 2 groups during follow-up. **Results** The ratio of patients with hypertension and acute myocardial infarction were higher in old group than in non-old group, but with no significant difference between them ($P > 0.05$). Compared with non-old group, the Syntax score of the old group was significantly higher [(26.6 ± 8.49) vs (23.5 ± 9.10), $P < 0.01$]. All procedures were successfully completed in all-patients in both groups. The procedural strategies, the length and diameter of stent in LMCA and the ratio of drug eluting stent implantation were not significantly different between two groups. Meanwhile, the rate of MACE, stent thrombosis and all cause death were not significantly different between two groups. **Conclusion** PCI can be performed in old female LMCA patients successfully and safely. Anti-platelet therapy and optimized procedures will improve the long-term clinical outcomes of PCI in old females with LMCA disease.

【Key words】 coronary artery disease; left main coronary artery; percutaneous coronary intervention; female; aged

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冠状动脉左主干 (left main coronary artery, LMCA) 病变约占冠状动脉造影的3%~5%, 由于左主干提供左心室70%的血供, 如出现无保护左主干血流被阻断, 易产生心肌缺血并发症等严重后果^[1]。同时老年女性冠状动脉粥样硬化性心脏病 (冠心病) 患者合并危险因素多, 冠状动脉病变较严重, 推测老年女性冠心病患者若存在LMCA, 其预后将更差, 死亡率更高^[2,3]。然而, 目前对于合并LMCA的老年女性患者经皮冠状动脉介入治疗 (percutaneous coronary intervention, PCI) 预后相关的研究鲜见报道。本文旨在观察具有合并LMCA临床特征的老年女性患者行PCI术后的长期临床疗效, 具体分析如下。

1 对象与方法

1.1 研究对象

1997年12月至2012年10月共有1319例患者在沈阳军区总医院首次行冠状动脉造影提示LMCA并行PCI, 女性患者共302例, 其中 ≥ 65 岁的老年女性156例, 年龄 $65 \sim 85$ (72.0 ± 4.3) 岁; < 65 岁非老年女性146例, 年龄 $21 \sim 64$ (55.5 ± 7.1) 岁。LMCA病变定义为左主干管径狭窄 $\geq 50\%$ 。心功能分级按纽约心脏联合会 (NYHA) 分级标准, 常规采用PCI适应证、排除标准及PCI成功标准, 并回顾性地分析入选患者的详细临床资料。

1.2 方法

按Judkins法行冠状动脉造影术, 常规行冠状动脉内球囊预扩张和支架置入术。采用Syntax评分系统对所有患者冠状动脉病变进行评分^[4], 采用Medina分型标准定义LMCA分叉病变 (其中0, 1, 1或1, 1, 1为真性分叉病变)。分叉支架术常规采用裙裤 (cullotte) 支架术、改良迷你挤压 (modified mini-crush, MM-Crush) 支架术及T支架术等。植入支架包括: 2003年4月前均为裸金属支架 (bare metal stent, BMS), 2003年4月后多植入药物洗脱支架 (drug eluting stent, DES), 包括Cypher西罗莫司 (sirolimus) DES、TAXUS紫杉醇DES、EXCEL西罗莫司DES、Firebird西罗莫司DES及Xience V依维莫司 (everolimus) DES等)。

1.3 围手术期用药

PCI术前、后常规剂量口服氯吡格雷 (服用2年) 及阿司匹林 (长期), 必要联合使用替罗非班静点。

1.4 随访

出院患者常规进行电话随访, 并建议患者6~9个月后来院进行冠状动脉造影复查, 记录主要不良心

血管事件 (major adverse cardiac event, MACE) 发生率及支架血栓事件。MACE包括心性死亡、非致死性心肌梗死 (myocardial infarction, MI) 及靶血管再次血运重建 (target vessel revascularization, TVR)。支架内血栓定义采用美国学术研究联合会标准^[5]。

1.5 统计学处理

所有计量资料均进行正态性和方差齐性检验。计量资料以 $\bar{x} \pm s$ 表示, 两组间比较采用独立样本 t 检验; 计数资料比较采用 χ^2 检验, 必要时应用Fisher精确概率法。使用SPSS 17.0软件进行统计学分析。 $P < 0.05$ 为差异有统计学意义。

2 结果

2.1 临床及冠状动脉病变基础情况

老年组高血压和急性心肌梗死的比例较非老年组有增高的趋势, 但差异无统计学意义 (表1)。虽然老年组中每一冠状动脉病变指标与非老年组相比差异均无统计学意义 (表2), 但在Syntax评分中, 老年组的评分明显高于非老年组 [(26.6 ± 8.5) vs (23.5 ± 9.1) , $P < 0.01$]。

2.2 PCI特征

老年组与非老年组PCI成功率均为100%。两组所采用手术术式、植入支架平均直径及长度, 以及DES的比例差异无统计学意义。但老年组的完全血运重建的比例明显低于非老年组 (65.4% vs 80.8% , $P < 0.01$)。PCI有关资料见表3。

2.3 随访结果

对两组成功PCI患者平均随访 (42.0 ± 19.3) 个月。老年组无失访, 非老年组有3例失访 (随访率97.9%)。老年组复查冠状动脉造影的比例明显低于非老年组 (25.0% vs 37.7% , $P < 0.05$)。与非老年组相比较, 老年组在总MACE发生率、支架内血栓及全因死亡的发生率均有增高趋势, 但差异无统计学意义 (表4)。

3 讨论

随着社会老龄化的进展, 老年冠心病患者数量在不断增加, 尤其老年女性失去了体内雌激素的血管保护作用, 且常常存在较多高血压、糖尿病、高脂血症等冠心病危险因素, 冠状动脉病变严重性随增龄而增加^[6-8]。随着PCI技术的发展, 接受PCI治疗的老年女性患者数量呈持续增加趋势, 术中死亡率逐渐下降, 成功率有所提高^[9]。但对于合并LMCA病变的老年女性冠心病患者行PCI治疗后的长期疗效尚缺乏相关研究。

表1 两组患者临床基本特征的比较

Table 1 Comparison of baseline characteristics between two groups

[n(%)]

Group	n	HT	DM	HLP	CVD	UAP	AMI	OMI	Cardiac function grade III-IV
Old	156	110 (70.5)	52 (33.3)	67 (42.9)	13 (8.3)	128 (82.1)	33 (21.2)	21 (13.5)	11 (7.1)
Non-old	146	89 (61.0)	42 (28.8)	56 (38.4)	7 (4.8)	120 (82.2)	24 (16.4)	17 (11.6)	5 (3.4)

HT: hypertension; DM: diabetes mellitus; HLP: Hyperlipidemia; CVD: cerebrovascular disease; UAP: unstable angina pectoris; AMI: acute myocardial infarction; OMI: old myocardial infarction

表2 两组患者冠状动脉病变特征的比较

Table 2 Comparison of angiographic characteristics between two groups

[n(%)]

Group	n	LMCA stenosis lesions(%)					Bifurcation lesions	LMCA plus		Non-LMCA CTO	Slow-flow
		Ostium	Shaft	Distal	Ostium to distal	Total		LAD	LCX		
Old	156	52 (23.1)	38 (16.9)	130 (57.8)	5 (2.2)	225 (100.0)	54 (34.6)	122 (78.2)	64 (41.0)	37 (23.7)	4 (2.6)
Non-old	146	47 (21.5)	43 (19.6)	120 (54.8)	9 (4.1)	219 (100.0)	44 (30.1)	111 (76.0)	49 (33.6)	27 (18.5)	7 (4.8)

LMCA: left main coronary artery; LAD: left anterior descending artery; LCX: left circumflex artery; CTO: chronic total occlusion; Slow-flow: the blood flow in LMCA less than 3 grade before angioplasty

表3 两组患者PCI特征的比较

Table 3 Comparison of PCI characteristics between two groups

Group	n	Primary PCI[n(%)]	One-stent [n(%)]	Bifurcation stent[n(%)]			Complete revascularization [n(%)]	Stent in LMCA(mm, $\bar{x} \pm s$)		DES[n(%)]
				Culotte	MM-Crush	T		Diameter	Length	
Old	156	14 (9.0)	123 (78.8)	3 (1.9)	13 (8.3)	17 (10.9)	102 (65.4)**	3.6 ± 0.47	15.5 ± 6.41	137 (87.8)
Non-old	146	6 (4.1)	118 (80.8)	7 (4.8)	10 (6.8)	11 (7.5)	118 (80.8)	3.6 ± 0.43	14.7 ± 8.23	128 (87.7)

PCI: percutaneous coronary intervention; Culotte: Culotte stent technique; MM-Crush: modified mini-crush stent technique; T: T-stent technique; LMCA: left main coronary artery; DES: drug eluting stent. *Compared with non-old group, ** $P < 0.01$

表4 两组患者住院及随访资料的比较

Table 4 Comparison of in-hospital and follow-up outcomes between two groups

[n(%)]

Group	n	Follow-up angiography	MACE				In-stent thrombosis	All-cause death
			Cardiac death	MI	TVR	Total		
Old	156	39 (25.0)*	5 (3.2)	5 (3.2)	19 (12.2)	29 (18.6)	4 (2.6)	9 (5.8)
Non-old	146	55 (37.7)	5 (3.4)	2 (1.4)	14 (9.6)	21 (14.4)	2 (1.4)	5 (3.4)

MACE: major adverse cardiac event; MI: myocardial infarction; TVR: target vessel revascularization. Compared with non-old group, * $P < 0.05$

由于重度狭窄的LMCA病变危及整个左心室心肌,较一般冠状动脉病变风险更高、预后更差,药物治疗远期疗效差、病死率高,因此,外科治疗一直被认为是LMCA病变的首选治疗方法^[10,11],随着抗血小板、调脂药物及DES的应用使LMCA病变的介入治疗的风险降低,结果得到改善。本研究比较了老年与非老年女性合并LMCA病变的临床特征、冠状动脉病变特点、PCI成功率及长期临床疗效。结果显示,尽管老年组合并高血压、糖尿病及脑血管病的比例有增高的趋势,冠状动脉病变的复杂性明显高于非老年女性,但两组PCI成功率及长期临床随访结果差异无统计学意义。分析其原因:一方面与近年新型抗血栓药物及器械改进(尤其是DES的使用)有关^[12];另一方面与本中心在LMCA病变PCI治疗方面积累了较丰富的经验有关。本组156例老年女性患者均接受了 ≥ 1 年的长期随访,最长为12年,其中75.6%的老年女性术后无MACE存活,与同期非老年女性患者相似。老年女性组中使

用DES的比率与非老年组差异无统计学意义(87.8% vs 87.7%, $P > 0.05$),同时建议其术后服用氯吡格雷达到2年以期降低支架内血栓的发生。另外,施术者PCI前对LMCA病变能进行恰当评估并选择合理的治疗策略,如根据病变的性质、特点及解剖因素选择单支架术抑或双支架术。本组资料显示,两组单支架术的比例均较高(78.8%和80.8%),这一手术策略可能是改善老年组长期预后的原因之一。目前,国内外研究也多提示LMCA采用单支架术的长期疗效明显好于双支架术^[13,14]。同时,本中心针对双支架术式进行了部分改良^[15],如采用MM-Crush分叉支架技术治疗LMCA真性分叉病变,其优点在能完全覆盖分支口部病变前提下,边支支架仅突入到主支血管内1~2mm,从而使局部支架金属丝重叠减少,可降低患者支架内血栓的风险,并且分支口部通常也仅为一层支架金属网,指引导丝及球囊只通过一层支架网眼,增加了最后的球囊对吻扩张成功率,从而能够改善老年女

性患者的长期预后。

尽管完全性血运重建可能提高患者的术后无症状存活率,但在老年患者中,随着年龄的增加、冠状动脉病变渐呈弥漫化(Syntax评分明显增加)^[16],导致完全血运重建的概率降低或无法完成,不完全血运重建便成为“无奈”选择。本组资料显示,老年组患者完全性血运重建的比例明显低于非老年组,但无MACE存活两组差异无统计学意义,提示在合并LMCA的老年女性患者中,采用部分血运重建是可行的,和非老年女性患者一样可获得相似的、理想的长期临床效果。

总之,合并LMCA病变的老年女性患者接受PCI是安全的,通过强化抗血小板治疗、选择合理的手术策略等措施可改善其长期预后。但由于本组入选病例仍较少,在有差异趋势的指标中可能随样本量增加得到差异有统计学意义的结果,故本组研究还需增加样本量、延长随访时间以获得更为准确的结论。

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