·临床研究·

老年急性后循环脑梗死机械取栓血管再通患者脑微出血分布特点及预后研究

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【摘 要】 目的 探讨老年急性后循环脑梗死(POCI)行机械取栓治疗的血管再通患者脑微出血(CMBs)的分布特征,及其与患者预后的相关性。**方法** 选取2023年1月至2025年1月聊城市第二人民医院收治的150例接受机械取栓治疗且术后实现血管再通的老年急性POCI患者为研究对象。所有患者入院后完善经颅磁共振成像检查,评估CMBs的检出情况、病灶数量及分布特征;依据是否检出CMBs将患者分为CMBs组与非CMBs组,比较两组患者基线临床资料差异。术后3个月进行随访,采用改良Rankin量表(mRS)评估患者预后,并将其分为预后良好组与预后不良组。采用SPSS 26.0软件进行数据分析。依据数据类型,组间比较分别采用独立样本t检验或χ^2检验。构建二元logistic回归模型,分析CMBs数量、分布部位与患者不良预后的相关性。**结果** 150例老年急性POCI患者中共检出CMBs阳性60例(40.00%)。60例CMBs阳性患者中,病灶数量为1个(轻度)、2~5个(中度)及>5个(重度)分别为6例(10%)、22例(36.67%)及32例(53.33%)。CMBs分布于脑叶、深部脑区及混合型分别为13例(21.67%)、26例(43.33%)及21例(35.00%)。CMBs组年龄≥80岁、既往脑卒中病史、脑白质高信号的患者占比均显著高于非CMBs组,总胆固醇及低密度脂蛋白胆固醇水平低于非CMBs组,差异均有统计学意义(均$P<0.05$)。149例患者完成3个月随访,预后良好89例(59.73%),预后不良60例(40.27%)。Logistic回归分析结果显示,重度CMBs($OR=1.883$,95%CI 1.156~3.068;$P=0.011$)、脑叶分布CMBs($OR=1.516$,95%CI 1.047~2.196;$P=0.029$)是影响老年急性POCI患者不良预后的独立危险因素。**结论** 老年急性POCI患者CMBs检出率处于较高水平,多数患者CMBs负荷为重度,病灶以深部脑区分布最为多见;高龄、既往脑卒中史、脑白质病变及血脂代谢异常与CMBs检出相关;CMBs数量≥5个、脑叶分布CMBs是老年急性POCI患者机械取栓术后3个月不良预后的独立危险因素。

【关键词】 老年人;急性后循环脑梗死;脑微出血;不良预后

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Distribution characteristics and prognosis of cerebral microbleeds in elderly patients with acute posterior circulation infarction recanalized by mechanical thrombolysis

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【Abstract】 Objective To investigate the distribution characteristics of cerebral microbleeds (CMBs) in elderly patients with acute posterior circulation infarction (POCI) recanalized by mechanical thrombolysis, and their association with prognosis. **Methods** A total of 150 elderly patients with acute POCI who underwent mechanical thrombectomy and achieved vascular recanalization at Liaocheng Second People's Hospital from January 2023 to January 2025 were enrolled. After admission, transcranial magnetic resonance imaging (MRI) was performed on all patients to assess the detection, number and distribution of CMBs. According to the finding in MRI, the paticipants were divided into a CMBs group and a non-CMBs group. The differences in baseline clinical data were compared between the two groups. All patients were followed up for 3 months, and prognosis was assessed by modified Rankin Scale (mRS). And then the patients were assigned to a good prognosis group and a poor prognosis group. SPSS 26.0 statistics was performed for data analysis. Depending on data type, independent-samples t test or Chi-square test was used for intergroup comparison. Binary logistic regression model was constructed to analyze the associations between the number and distribution of CMBs and poor prognosis in patients. **Results** CMBs were detected in 60 of the 150 patients, yielding a positive detection rate of 40.00% (60/150). Among the 60 CMBs-positive patients, the number of lesions was 1 (mild) in 6 cases (10%), 2-5 (moderate) in 22 cases (36.67%) and >5 (severe) in 32 cases (53.33%). CMBs were distributed across the cerebral lobes in 13 cases (21.67%), deep cerebral regions in 26 cases (43.33%) and mixed types in 21 cases (35.00%). Intergroup comparison showed that the CMBs group had significantly higher proportions of patients aged ≥80 years, prior stroke history, and white matter hyperintensities, as well as lower total cholesterol and low-density lipoprotein

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cholesterol (LDL-C) levels than the non-CMBs group (all $P<0.05$). Among the 149 patients who completed the 3-month follow-up, 89 cases (59.73%) had a good prognosis, while 60 cases (40.27%) had a poor prognosis. Logistic regression analysis confirmed that severe CMBs ($OR=1.883$, 95%CI 1.156-3.068; $P=0.011$) and CMBs distribution in the cerebral lobes ($OR=1.516$, 95%CI 1.047-2.196; $P=0.029$) were independent risk factors for poor prognosis in elderly patients with acute POCI. **Conclusion** The detection rate of CMBs is relatively high in elderly patients with acute POCI. Most patients exhibit a severe CMB burden, and the lesions are most frequently distributed in deep cerebral regions. Advanced age, previous history of stroke, white matter lesions and dyslipidemia are associated with the detection of CMBs. The number of CMBs ≥5 and CMBs distribution in the cerebral lobes are independent risk factors for poor prognosis at 3 months after mechanical thrombectomy.

【Key words】 aged; acute posterior circulation infarction; cerebral microbleeds; poor prognosis

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脑微出血(cerebral microbleeds, CMBs)是脑小血管病变的典型影像学特征,现有研究表明,CMBs 不仅会提高急性缺血性脑卒中(acute ischemic stroke, AIS)的发病风险,还可能增加 AIS 患者不良预后的发生概率[1]。急性后循环梗死(posterior circulation infarction, POCI)占所有缺血性脑梗死的 15%~20%,且具有死亡率与致残率双高的临床特点[2]。当前,针对急性 POCI 患者 CMBs 检出率、病灶负荷及分布特征的研究较为有限,关于 CMBs 特征与急性 POCI 患者预后关联性的循证依据仍较为有限。基于此,本研究以近两年收治的 150 例接受机械取栓治疗的老年急性 POCI 患者为研究对象,调查患者的 CMBs 检出率、病灶负荷及分布特征,并进一步分析 CMBs 特征与患者术后 3 个月预后的关联性,旨在为老年急性 POCI 的临床治疗方案制定及预后改善提供循证参考。

1 对象与方法

1.1 研究对象

选取 2023 年 1 月至 2025 年 1 月聊城市第二人民医院收治的 150 例接受机械取栓治疗且术后实现血管再通的老年急性 POCI 患者作为研究对象。纳入标准:年龄≥60 岁;入院后完成颅脑磁共振(magnetic resonance imaging, MRI)检查,影像学资料完整清晰、符合诊断要求,经检查证实责任病灶位于后循环供血区;静脉溶栓治疗效果不佳,发病 24 h 内行动脉取栓治疗;闭塞血管成功再通;病例临床资料完整;可配合完成术后随访。排除标准:合并重要器官严重功能不全;存在活动性出血或出血性疾病病史;凝血功能异常;合并恶性肿瘤;存在急性颅内出血或蛛网膜下腔出血。

1.2 方法

1.2.1 手术方法及术后管理 所有患者均由同一组手术医师完成机械取栓操作,以数字减影血管造影(digital subtraction angiography, DSA)机(厂家:日本东芝医疗系统株式会社,型号:Toshiba INFX-800V)为引导设备,术后复查造影,若闭塞血管改良脑梗死溶栓分级(modified thrombolysis in cerebral infarction, mTICI)≥2b 级,且 15 min 后复查造影仍可维持 mTICI 分级≥2b 级,则结束操作;若初次取栓后无法维持前向血流,则重复取栓操作。术后常规监测患者凝血功能指标,遵医嘱口服阿司匹林肠溶片预防血栓形成,嘱患者卧床休息,待病情稳定后逐步开展步行功能训练,告知患者避免过度活动,严格戒烟戒酒。

1.2.2 颅脑 MRI 扫描及 CMBs 定义与分布特点 (1)颅脑 MRI 扫描。所有患者均于入院 48 h 内完成颅脑 MRI 检查,检查设备为 3.0T MRI 扫描仪(厂家:飞利浦,型号:Ingenia Elition3.0T),扫描序列包括:T1 加权成像(T1 weighted imaging, T1WI)、T2 加权成像(T2 weighted imaging, T2WI)、弥散加权成像(diffusion-weighted imaging, DWI)、磁敏感加权成像(susceptibility weighted imaging, SWI)。(2)CMBs 定义[3]。SWI 序列显示为直径 2~10 mm 边界清晰的圆形或椭圆形低信号病灶,病灶周围无水肿;结合头颅 MRI 常规序列排除钙化、铁沉积、血管流空影及海绵状血管瘤等类似表现病变后,即可定义为 CMBs。(3)分布特征。采用 CMBs 解剖评定量表(microbleed anatomical rating scale, MARS)[4] 对 CMBs 分布特征进行描述:①根据患者是否检出 CMBs,将其分为 CMBs 组与非 CMBs 组;②参照 Gao 等[5]的研究标准,根据 CMBs 病灶数量将患者分为非 CMBs 组(无 CMBs 病灶)、轻度 CMBs 组(1 个 CMBs 病灶)、中度 CMBs 组(2~5 个 CMBs 病灶)、重度 CMBs 组(>5 个 CMBs 病灶);③依据 CMBs 病灶分布位置,分为非 CMBs 组(无 CMBs 病灶)、脑叶 CMBs 组、深部 CMBs 组与混合 CMBs 组,其中脑叶 CMBs 组病灶局限于幕上脑叶浅表区域,深部 CMBs 病灶局限于幕上深部或幕下深部,混合 CMBs 指病灶同时分布于脑叶与深部区域。

1.2.3 随访与预后评估 通过患者门诊复诊及电话等方式对患者术后 3 个月预后情况进行随访,采

用改良 Rankin 量表(modified rankin scale, mRS)[6]评估预后:mRS 得分 0~2 分定义为预后良好,得分>2 分定义为预后不良,据此将患者分为预后良好组与预后不良组。

1.2.4 资料收集 通过医院电子病历系统采集以下临床资料:患者年龄、性别、体质量指数、基础疾病史、高同型半胱氨酸血症病史、既往卒中史、吸烟史、饮酒史、脂质代谢相关指标、入院时美国国立卫生研究所卒中量表(the National Institutes of Health stroke scale, NIHSS)评分、入院时后循环 Alberta 卒中项目早期计算机断层扫描评分(posterior circulation Alberta stroke program early computed tomography score, pc-ASPECTS)[7]、脑白质高信号情况[8]、脑动脉狭窄程度、心源性梗死、责任病变部位、支架置入情况、补救支架治疗情况、术前静脉溶栓情况、穿刺至闭塞血管开通时间、术后症状性颅内出血(symptomatic intracraninal hemorrhage, sICH)发生情况等。其中,NIHSS 评分总分范围为 0~42 分,得分越高提示患者神经功能损伤程度越重。pc-ASPECTS≤7 分时,提示患者发病 3 个月后无法独立生活或发生死亡的风险较高。脑动脉狭窄程度分级:经颅脑磁共振血管造影(magnetic resonance angiography, MRA)、颈部血管超声或头颈部计算机断层扫描血管成像(computed tomography angiography, CTA)检查提示存在颅内或颈部动脉狭窄者,若存在颅内/颈部动脉同时狭窄或同一血管多处狭窄,选取狭窄程度最严重处进行分组;参照华法林-阿司匹林症状性颅内动脉疾病研究(warfarin aspirin symptomatic intracranial disease, WASID)[9]提出的方法划分狭窄程度,分为无狭窄(狭窄率<30%)、轻度狭窄(狭窄率 30%~49%)、中重度狭窄(狭窄率 50%~100%)。sICH 定义为:术后影像学检查明确存在颅内出血,同时伴随神经功能恶化,即 NIHSS 评分较术前基线水平升高≥4 分。

1.3 统计学处理

采用 SPSS 26.0 统计软件进行数据分析。符合正态分布的计量资料用均值±标准差($\bar{x}\pm s$)表示,两组间比较采用独立样本 t 检验;计数资料用例数(百分率)表示,组间比较采用 χ^2 检验;多组间两两比较采用 Bonferroni 法校正检验水准。构建二元 logistic 回归模型,分析 CMBs 负荷及分布特征与老年急性 POCI 患者发病 3 个月预后不良的关联性。P<0.05 为差异有统计学意义。

2 结 果

2.1 老年急性 POCI 患者 CMBs 检出情况及特征

本研究共纳入 150 例老年急性 POCI 患者,其 60 例检出 CMBs,即 CMBs 组,阳性检出率为 40.00%(60/150),其余为非 CMBs 组(n = 90)。60 例 CMBs阳性患者中,病灶数量为 1 个(轻度)、2~5个(中度)及>5 个(重度)分别为 6 例(10%)、22 例(36.67%)及 32 例(53.33%)。CMBs 分布于脑叶、深部脑区及混合型分别为 13 例(21.67%)、26 例(43.33%)及 21 例(35.00%)。

2.2 两组患者临床资料

CMBs 组年龄≥80 岁、既往脑卒中病史、存在脑白质高信号的患者占比均显著高于非 CMBs 组,总胆固醇(total cholesterol, TC)与低密度脂蛋白胆固醇(low density lipoprotein cholesterol, LDL-C)水平显著低于非 CMBs 组,差异均有统计学意义(均 P<0.05;表 1)。

表 1 CMBs 组及非 CMBs 组患者临床资料比较

Table 1 Comparison of clinical data between CMBs group and non-CMBs group

Item	CMBs group (n=60)	Non-CMBs group (n=90)	χ^2/t	P value
Gender[n(%)]			0.083	0.774
Male	42(70.00)	61(67.78)		
Female	18(30.00)	29(32.22)		
Age[n(%)]			7.656	0.006
60-80 years	30(50.00)	65(72.22)		
≥80 years	30(50.00)	25(27.78)		
BMI[n(%)]			1.028	0.598
<18.5 kg/m^2	8(13.33)	8(8.89)		
18.5-24.0 kg/m^2	28(46.67)	48(53.33)		
≥24.0 kg/m^2	24(40.00)	34(37.78)		
Diabetes mellitus[n(%)]	19(31.67)	32(35.56)	0.243	0.622
Hypertension[n(%)]	50(83.33)	79(87.78)	0.591	0.442
Hyperlipidemia[n(%)]	16(26.67)	28(31.11)	0.343	0.558
Coronary heart disease[n(%)]	11(18.33)	14(15.56)	0.200	0.655
Atrial fibrillation[n(%)]	5(8.33)	5(5.56)	0.446	0.504
Hyperhomocysteinemia[n(%)]	14(23.33)	17(18.89)	0.434	0.510
Previous history of stroke[n(%)]	32(53.33)	23(25.56)	11.962	<0.001
Smoking history[n(%)]	32(53.33)	44(48.89)	0.285	0.594
History of alcohol drinking [n(%)]	24(40.00)	32(35.56)	0.304	0.581
TG(mmol/L, $\bar{x}\pm s$)	1.53±0.23	1.57±0.25	0.991	0.323
TC(mmol/L, $\bar{x}\pm s$)	3.35±0.45	4.11±0.51	9.364	<0.001
LDL-C(mmol/L, $\bar{x}\pm s$)	2.03±0.37	2.73±0.41	10.645	<0.001
HDL-C(mmol/L, $\bar{x}\pm s$)	1.05±0.13	1.03±0.16	0.807	0.421
White matter hyperintensity [n(%)]	52(86.67)	59(65.56)	8.339	0.004
Cerebral arterial stenosis[n(%)]			0.519	0.772
No	14(23.33)	22(24.44)		
Mild	24(40.00)	40(44.44)		
Moderate-to-severe	22(36.67)	28(31.12)		

CMBs: cerebral microbleeds; BMI: body mass index; TG: triglyceride; TC: total cholesterol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol.

2.3 患者预后情况

3 个月随访期间有 1 例患者失访,最终共149 例患者完成随访并获得明确结局,其中 89 例预后良好(59.73%),60 例预后不良(40.27%)。

2.4 不同 CMBs 特征患者预后情况

重度 CMBs 患者预后不良率显著高于无 CMBs 及轻度 CMBs 患者,脑叶 CMBs 及混合型 CMBs 患者预后不良率显著高于无 CMBs 患者,差异均有统计学意义(均 $P<0.05$;表 2)。

表 2 不同 CMBs 特征患者预后情况比较

Table 2 Comparison of prognosis among patients with different CMBs characteristics [n(%)]

Item	n	Good prognosis group(n=89)	Poor prognosis group(n=60)	χ^2	P value
Number of CMBs				27.249	<0.001
No CMBs	89	65(73.03)	24(26.97)		
Mild	6	5(83.33)	1(16.67)		
Moderate	22	12(54.55)	10(45.45)		
Severe	32	7(21.88) *#	25(78.12) *#		
CMBs distribution site				18.288	<0.001
No CMBs	89	65(73.03)	24(26.97)		
Brain lobe	13	3(23.08) *	10(76.92) *		
Deep part	26	12(46.15)	14(53.85)		
Mixed	21	9(42.86) *	12(57.14) *		

CMBs: cerebral microbleeds. Compared with no CMBs, *$P<0.008$; compared with mild CMBs, #$P<0.008$.

2.5 不同预后患者临床资料

预后不良组患者入院时 pc-ASPECTS 评分显著低于预后良好组,NIHSS 评分、取栓次数均显著高于预后良好组,差异均有统计学意义(均 $P<0.05$;表 3)。

2.6 老年急性 POCI 患者预后影响因素分析

以老年急性 POCI 患者预后情况为因变量,选取表 2 及表 3 中差异有统计学意义的变量为自变量,构建二元 logistic 回归模型,分析结果显示:入院时 NIHSS 评分、重度 CMBs、脑叶 CMBs、取栓次数≥2 次是老年急性 POCI 患者发病后 3 个月预后不良的独立危险因素,入院时 pc-ASPECTS 评分是保护因素($P<0.05$;表 4)。

3 讨 论

2020 年发表的 BASILAR 研究提示,机械取栓可改善 POCI 患者的临床预后[10]。本研究纳入近 2 年收治的行机械取栓治疗且术后血管成功再通的 150 例老年急性 POCI 患者为研究对象,其 CMBs 检出率为 40%;CMBs 阳性患者中,CMBs 数量≥5 个者占比最高,CMBs 分布最多位于大脑深部,提示 POCI 患者的 CMBs 负荷普遍较重,且病灶多分布于脑部深部区域。组间比较结果显示,CMBs 组患者中年龄≥80 岁、既往脑卒中史、合并脑白质高信号者占比高于非 CMBs 组,TC 及 LDL-C 水平低于非 CMBs 组,故建议临床重视对具备以上特征患者的 CMBs 筛查。

既往研究表明,CMBs 与卒中发病存在相关性,且可能对患者最终治疗效果产生影响,但目前关于 CMBs 与 POCI 及其预后的关联尚未形成明确结论[11]。为探讨 CMBs 与老年急性 POCI 机械取栓患者预后的关系,本研究对入组患者开展了为期 3 个月的随访,结果显示重度 CMBs 患者预后不良率高于无 CMBs 及轻度 CMBs 患者,脑叶 CMBs 及混合型 CMBs 患者预后不良率高于无 CMBs 患者,提示合并 CMBs 的 POCI 患者预后不良风险更高,且不同 CMBs 负荷及分布特征的患者预后存在显著差异。

多因素 logistic 回归分析结果显示,重度 CMBs、脑叶 CMBs 是影响老年急性 POCI 患者机械取栓术后 3 个月预后不良的独立危险因素。Lee 等[12]研究发现,血管内治疗术后脑功能恶化程度与 CMBs 负荷呈正相关,且 CMBs 数量≥5 个可降低患者的血管再通率。CMBs 的病理本质为脑小血管损伤后,血液成分外渗导致含铁血黄素沉积于脑实质,重度 CMBs 提示患者存在广泛且严重的脑小血管损伤,因此患者预后更差[13-15]。据此,早期识别 CMBs 并明确其病灶部位与严重程度对 POCI 患者的临床预后评估具有重要价值。

综上,老年急性 POCI 患者 CMBs 检出率较高,患者 CMBs 负荷多为重度,病灶多分布于脑部深部,高龄、既往脑卒中史、脑白质病变以及血脂代谢异常与患者 CMBs 检出率相关,CMBs 数量≥5 个、CMBs 分布于脑叶是影响患者机械取栓术后 3 个月预后不良的独立危险因素。建议临床重视对具备上述特征患者的 CMBs 筛查,同时关注患者的 CMBs 负荷与分布位置,以优化预后评估。本研究存在一定局限性:纳入样本量较小,且所有病例均来自单中心,研究结论可能存在选择偏倚,有待后续多中心大样本研究进一步验证。

表3 老年急性POCI合并CMBs不同预后患者临床资料比较

Table 3 Comparison of clinical data of elderly patients with POCI and CMBs with different prognosis conditions

Item	Good prognosis group(n=89)	Poor prognosis group(n=60)	χ^2/t	P value
Gender[n(%)]			0.149	0.699
Male	62(69.66)	40(66.67)		
Female	27(30.34)	20(33.33)		
Age[n(%)]			1.289	0.256
60-80 years	59(66.29)	45(75.00)		
≥80 years	30(33.71)	15(25.00)		
BMI[n(%)]			3.225	0.199
<18.5 kg/m^2	12(13.48)	4(6.67)		
18.5-24.0 kg/m^2	40(44.94)	35(58.33)		
≥24.0 kg/m^2	37(41.57)	21(35.00)		
Diabetes mellitus[n(%)]	30(33.71)	21(35.00)	0.027	0.870
Hypertension[n(%)]	79(88.76)	50(83.33)	0.910	0.340
Hyperlipidemia[n(%)]	30(33.71)	14(23.33)	1.854	0.173
Coronary heart disease[n(%)]	11(12.36)	14(23.33)	3.091	0.079
Atrial fibrillation[n(%)]	4(4.49)	6(10.00)	1.735	0.188
Hyperhomocysteinemia[n(%)]	20(22.47)	11(18.33)	0.373	0.542
Previous history of stroke[n(%)]	37(41.57)	18(30.00)	2.061	0.151
Smoking history[n(%)]	40(44.94)	36(60.00)	3.251	0.071
History of alcohol drinking[n(%)]	39(43.82)	17(28.33)	3.664	0.556
TG(mmol/L, $\bar{x}\pm s$)	1.55±0.26	1.56±0.29	0.220	0.826
TC(mmol/L, $\bar{x}\pm s$)	3.63±0.45	3.74±0.49	1.412	0.160
LDL-C(mmol/L, $\bar{x}\pm s$)	2.39±0.49	2.42±0.53	0.355	0.723
HDL-C(mmol/L, $\bar{x}\pm s$)	1.04±0.12	1.03±0.11	0.516	0.607
White matter hyperintensity[n(%)]	70(78.65)	41(68.33)	2.008	0.156
Cerebral arterial stenosis[n(%)]			3.154	0.207
No	25(28.09)	10(16.67)		
Mild	34(38.20)	30(50.00)		
Moderate-to-severe	30(33.71)	20(33.33)		
Stent placement[n(%)]	40(44.94)	30(50.00)	0.368	0.544
Time from puncture to recanalization of occluded vessel(min, $\bar{x}\pm s$)	88.64±12.36	91.39±11.79	1.357	0.177
Cardiogenic infarction[n(%)]	32(35.96)	30(50.00)	2.910	0.088
Lesion site[n(%)]			0.764	0.858
Distal segment of basilar artery	18(20.22)	11(18.33)		
Middle segment of basilar artery	13(14.61)	8(13.33)		
Proximal segment of basilar artery	45(50.56)	29(48.34)		
Vertebral artery V4 segment	13(14.61)	12(20.00)		
pc-ASPECTS score at admission(points, $\bar{x}\pm s$)	9.19±1.96	7.24±1.77	6.190	<0.001
NIHSS score at admission(points, $\bar{x}\pm s$)	14.33±2.45	17.46±2.89	7.110	<0.001
Thrombectomy frequency[n(%)]			10.593	<0.001
1	60(67.42)	24(40.00)		
≥2	29(32.58)	36(60.00)		
Thrombolysis before thrombectomy[n(%)]	6(6.74)	6(10.00)	0.514	0.473
Rescue stent therapy[n(%)]	40(44.94)	36(60.00)	3.251	0.071
sICH[n(%)]	0(0.00)	3(5.00)	2.361	0.124*

POCI: posterior circulation infarction; CMBs: cerebral microbleeds; BMI: body mass index; TG: triglyceride; TC: total cholesterol; LDL-C: low-density lipoprotein cholesterol; HDL-C: high-density lipoprotein cholesterol; pc-ASPECTS: posterior circulation Alberta stroke program early computed tomography score; NIHSS: the National Institutes of Health stroke scale; sICH: symptomatic intracraninal hemorrhage.

表 4 老年急性 POCI 患者预后的多因素 logistic 回归分析

Table 4 Multivariable logistic regression analysis of the prognosis in elderly patients with POCI

Factor	β	*SE*	*Wald* χ^2	*OR*	95%*CI*	*P* value
pc-ASPECTS score at admission	−0.845	0.343	6.069	0.430	0.219−0.841	0.014
NIHSS score at admission	0.793	0.224	12.533	2.210	1.425−3.428	<0.001
Number of CMBs						
No CMBs	−	−	−	Ref.	−	−
Mild	0.326	0.298	1.197	1.385	0.773−2.485	0.275
Moderate	0.415	0.336	1.526	1.514	0.784−2.926	0.217
Severe	0.633	0.249	6.463	1.883	1.156−3.068	0.011
CMBs distribution site						
No CMBs	−	−	−	Ref.	−	−
Brain lobe	0.416	0.189	4.845	1.516	1.047−2.196	0.029
Deep part	0.337	0.296	1.296	1.401	0.784−2.502	0.256
Mixed	0.305	0.247	1.525	1.357	0.836−2.201	0.218
Thrombectomy frequency≥2	0.749	0.297	6.360	2.115	1.182−3.785	0.012

POCI: posterior circulationinfarction; pc-ASPECTS:posterior circulation Alberta stroke program early computed tomography score; NIHSS: the National Institutes of Health stroke scale; CMBs: cerebral microbleeds. −: no datum.

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