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麻醉恢复室患者全麻苏醒期躁动的影响因素 及与术后认知功能障碍的关系研究*

李新琳 吴艳飞 王丽丽 杨沙沙 马海平[△]

(新疆医科大学第一附属医院麻醉科 新疆 乌鲁木齐 830054)

摘要 目的:探讨麻醉恢复室患者全麻苏醒期躁动(EA)的影响因素及与术后认知功能障碍(POCD)的关系。**方法:**选取2018年7月~2020年6月期间我院收治的100例麻醉恢复室患者,采用Riker镇静-躁动评分标准评估患者EA,采用本院自制问卷调查量表统计患者一般资料,采用蒙特利尔认知评估(MoCA)量表评估研究对象的认知功能,应用多因素非条件Logistic回归分析EA患者的影响因素,观察EA与POCD的关系。**结果:**100例麻醉恢复室患者中,EA的发生率为13.00%(13/100),其中发生EA的患者纳为躁动组(n=13),未发生EA的患者纳为安静组(n=87)。POCD的发生率为38.00%(38/100),其中发生POCD的患者纳为POCD组(n=38),未发生POCD的患者纳为非POCD组(n=62)。单因素分析结果显示,EA的发生与年龄、性别、吸烟史、嗜酒史、术中补液、放置导尿管时间、ASA分级、术后镇痛、麻醉恢复室停留时间等因素有关($P<0.05$),而与麻醉风险等级、麻醉方式、术后血小板、术后白蛋白等因素无关($P>0.05$)。多因素非条件Logistic回归分析结果显示男性、年龄 ≥ 60 岁、ASA分级为III级、术后无镇痛、诱导后放置导尿管为EA发生的危险因素($P<0.05$)。POCD组患者EA的发生率高于非POCD组($P<0.05$)。**结论:**EA的发生与多种因素有关,临床应对年龄 ≥ 60 岁、ASA分级为III级、术后无镇痛、诱导后放置导尿管等因素予以关注并适当干预,同时POCD与EA的发生具有一定的关系。

关键词:麻醉恢复室;全麻苏醒期躁动;影响因素

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Study on the Influencing Factors of Restlessness During Recovery Period of General Anesthesia and Its Relationship with Postoperative Cognitive Dysfunction in Patients in Anesthesia Recovery Room*

LI Xin-lin, WU Yan-fei, WANG Li-li, YANG Sha-sha, MA Hai-ping[△]

(Department of Anesthesiology, The First Affiliated Hospital of Xinjiang Medical University, Urumqi, Xinjiang, 830054, China)

ABSTRACT Objective: To investigate the influencing factors of restlessness (EA) during recovery period of general anesthesia and its relationship with postoperative cognitive dysfunction (POCD) in patients in anesthesia recovery room. **Methods:** 100 patients in the anesthesia recovery room in our hospital were selected from July 2018 to June 2020. Riker sedation agitation score was used to evaluate the patients' EA. The self-made questionnaire survey scale was used to calculate the general data of patients. The Montreal Cognitive Assessment (MoCA) scale was used to evaluate the cognitive function of the subjects. The influence of EA patients was analyzed by multivariate unconditional logistic regression. The relationship between EA and POCD was observed. **Results:** The incidence of EA was 13.00% (13/100) in 100 patients in the anesthesia recovery room. The patients with EA were included in the restless group (n=13), and the patients without EA were included in the quiet group (n=87). The incidence of POCD was 38.00% (38/100). The patients with POCD were included in the POCD group (n=38), and the patients without POCD were included in the non POCD group (n=62). Univariate analysis showed that the incidence of EA was related to age, gender, smoking history, alcohol drinking history, intraoperative fluid infusion, catheter placement time, ASA classification, postoperative analgesia, anesthesia recovery room stay time and other factors ($P<0.05$), but not with anesthesia risk level, anesthesia mode, postoperative platelet, postoperative albumin and other factors ($P>0.05$). Multivariate unconditional logistic regression analysis showed that male, age ≥ 60 years, ASA grade III, no postoperative analgesia and catheter placement were risk factors for EA ($P<0.05$). The incidence of EA in POCD group was higher than that in non POCD group ($P<0.05$). **Conclusion:** The occurrence of EA is related to many factors. We should pay attention to the factors such as age ≥ 60 years old, ASA grade III, no postoperative analgesia, catheter placement after induction and so on.

Key words: Anesthesia recovery room; General anesthesia recovery agitation; Influencing factors

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作者简介:李新琳(1977-),女,硕士研究生,研究方向:临床麻醉,E-mail:lx1103803387@163.com

[△] 通讯作者:马海平(1975-),男,硕士,副主任医师,研究方向:临床麻醉,E-mail:13780160848@qq.com

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前言

全麻苏醒期躁动(EA)是麻醉的常见并发症之一,是全麻苏醒期的一种不恰当行为^[1]。当患者处于麻醉恢复时期时,缺乏自知和保护性反射。大部分患者 EA 持续时间短,可自行缓解,但也有部分 EA 患者反应过于剧烈,造成诸多不良后果,如自行拔出气管导管、输液通道、导尿管等,严重者甚至诱发严重气道和血流动力学的剧烈波动等并发症^[2-4],故防止 EA 的发生是临床工作中亟待解决的问题。术后认知功能障碍(POCD)也是术后常见的并发症之一,可影响患者预后^[5,6]。影响患者 EA、POCD 的因素及其复杂,包括手术、自身情况以及麻醉情况等,而临床有关 EA 与 POCD 的关系以及 EA 的具体影响因素尚不十分清楚,本研究就此展开探讨,以期对复苏室内工作人员更全面的了解 EA,及时采取更好的预防和干预措施。

1 资料与方法

1.1 一般资料

纳入标准:(1)无精神障碍,术前清醒,年龄 ≥ 18 岁,无严重的视听觉障碍,在全麻下择期行手术的住院患者;(2)术后留有气管插管,术程顺利,入麻醉恢复室内复苏的患者。排除标准:(1)入麻醉恢复室时已拔除气管插管者;(2)术前有服用精神药物史的患者;(3)术前长期吸毒、吸烟、酗酒、滥用药物者;(4)视力与听力异常意识障碍;(5)孕妇及哺乳期妇女;(6)器质性脑病者;(7)颅脑手术者。选取 2018 年 7 月~2020 年 6 月期间我院收治的 100 例麻醉恢复室患者,本次研究经我院伦理学委员会批准进行。

1.2 方法

(1)诊断标准:在患者麻醉恢复期间,采用 Riker 镇静-躁动评分^[7]标准评估患者 EA,根据患者表现分为 7 个等级,其中 1~4 级为无躁动,5~7 级即可诊断为 EA。(2)一般资料:采用本院自制问卷调查量表进行统计,包括年龄、性别、吸烟史、嗜酒史、麻醉风险等级、术中补液、放置导尿管时间、ASA 分级、术后镇痛、麻醉方式、术后血小板、术后白蛋白、麻醉恢复室停留时间。(3)POCD 采用蒙特利尔认知评估(MocA)量表评估研究对象的认知功能^[8],包括语言、计算能力、短时记忆、视空间、自行能力、注意力、延迟记忆、定向力和抽象思维等,总分 30 分,当总分 <26 分提示有认知功能障碍。

1.3 统计学方法

应用 SPSS 22.0 统计软件进行数据分析,计数资料以率表示,行 χ^2 检验,应用多因素非条件 Logistic 回归分析 EA 的影响因素, $P<0.05$ 表示差异有统计学意义。

2 结果

2.1 EA、POCD 发生情况

100 例麻醉恢复室患者中,发生 EA 13 例(躁动组),EA 的发生率为 13.00%(13/100),未发生 EA 的患者纳为安静组($n=87$)。100 例麻醉恢复室患者中,发生 POCD 38 例(POCD 组),POCD 的发生率为 38.00%(38/100),未发生 POCD 的患者纳为非 POCD 组($n=62$)。

2.2 EA 的单因素分析

单因素分析结果显示,EA 的发生与年龄、性别、吸烟史、嗜酒史、术中补液、放置导尿管时间、ASA 分级、术后镇痛、麻醉恢复室停留时间等因素有关($P<0.05$),而与麻醉风险等级、麻醉方式、术后血小板、术后白蛋白等因素无关($P>0.05$),详见表 1。

表 1 EA 的单因素分析
Table 1 Single factor analysis of EA

Factors		n=100	Quiet group(n=87)	Restless group(n=13)	χ^2	<i>P</i>
Age(years old)	18~44	54	52(96.30)	2(3.70)	19.163	0.000
	45~59	31	27(87.10)	4(12.90)		
	≥ 60	15	8(53.33)	7(46.67)		
Gender	Male	46	36(78.26)	10(21.74)	5.752	0.017
	Female	54	51(94.44)	3(5.56)		
Smoking history	Yes	29	20(68.97)	9(31.03)	11.754	0.000
	No	71	67(94.37)	4(5.63)		
History of alcoholism	Yes	23	13(56.52)	10(43.48)	24.531	0.000
	No	77	74(96.10)	3(3.90)		
Anesthesia risk level	1 level	39	35(89.74)	4(10.26)	0.432	0.806
	2 level	48	41(85.42)	7(14.58)		
	3 level	13	11(84.62)	2(15.38)		
	Limit	48	44(91.67)	4(8.33)	6.412	0.041
Intraoperative fluid infusion	Secondary	32	29(90.63)	3(9.38)		
	Open	20	14(70.00)	6(30.00)		

续表 1 EA 的单因素分析
Table 1 Single factor analysis of EA

Factors	n=100	Quiet group(n=87)	Restless group(n=13)	χ^2	P
Catheter placement time	Not placed	31	30(96.77)	1(3.23)	12.368
	Before induction	35	33(94.29)	2(5.71)	
	After induction	34	24(70.59)	10(29.41)	
ASA classification	I level	36	35(97.22)	1(2.78)	9.573
	II level	31	28(90.32)	3(9.68)	
	III level	33	24(72.73)	9(27.27)	
Postoperative analgesia	Yes	64	60(93.75)	4(6.25)	7.164
	No	36	27(75.00)	9(25.00)	0.017
Anesthesia mode	Inhalation anesthesia	65	57(87.69)	8(12.31)	0.082
	Intravenous anesthesia	35	30(85.71)	5(14.29)	0.779
Postoperative platelets($10^9/L$)	<100	28	25(89.29)	3(10.71)	0.339
	100~300	47	41(87.23)	6(12.77)	0.848
	>300	25	21(84.00)	4(16.00)	
Postoperative albumin(g/L)	<40	37	32(86.49)	5(13.51)	0.012
	≥ 40	63	55(87.30)	8(12.70)	0.907
Stay time in anesthesia recovery room(min)	≤ 90	42	41(97.62)	1(2.38)	4.512
	>90	58	46(79.31)	12(20.69)	0.034

2.3 EA 的多因素非条件 Logistic 回归分析

以麻醉恢复室患者发生躁动为因变量,以表 2 中有统计学意义的单因素为自变量,赋值情况见表 2。建立 Logistic 回

归模型,结果显示男性、年龄≥ 60 岁、ASA 分级为 III 级、术后无镇痛、诱导后放置导尿管为 EA 发生的危险因素($P<0.05$),详见表 2。

表 2 赋值情况
Table 2 Assignment

Factors	Assignment
EA	unhappen=0, happen=1
Age	18~44 years old=0, 45~59 years old=1, ≥ 60 years old=2
Gender	female=0, male=1
Smoking history	no=0, yes=1
History of alcoholism	no=0, yes=1
Intraoperative fluid infusion	limit=0, secondary=1, open=2
Catheter placement time	not placed=0, before induction=1, after induction=2
ASA classification	Ilevel=0, IIlevel=1, IIIlevel=2
Postoperative analgesia	yes=0, no=1
Stay time in anesthesia recovery room	≤ 90min=0, >90 min=1

2.4 POCD 组和非 POCD 组的 EA 发生率对比

POCD 组患者中,有 9 例发生 EA,EA 的发生率为 23.68% (9/38);非 POCD 组患者中,有 4 例发生 EA,EA 的发生率为 6.45% (4/62);POCD 组患者 EA 的发生率高于非 POCD 组 ($\chi^2=6.186, P=0.013$)。

3 讨论

麻醉药物进入人体后,主要通过作用于中枢神经系统来发挥麻醉效果^[9],但由于麻醉药物对中枢神经系统的抑制程度不同,当手术结束后患者意识逐渐恢复,麻醉药物并未代谢完全消失,残留的麻醉药物可引起大脑皮层及上行网状觉醒激活系统功能恢复不完全,进而影响患者对自身感觉的反应和处理,引发 EA^[10-12]。EA 的发生尽管是暂时的,但对患者而言存在很大安全隐患,极易引发擦伤、坠床、撞伤等意外事件,甚至患者挣

表 3 EA 的多因素非条件 Logistic 回归分析
Table 3 Multivariate unconditional logistic regression analysis of EA

Factors	β	SE	Wald χ^2	OR(95%CI)	P
Male	0.317	0.242	3.953	2.268(1.953~2.371)	0.000
Age $\geq$ 60 years	0.931	0.228	19.537	2.684(2.537~2.872)	0.000
ASA classification was III level	0.287	0.214	2.156	1.363(1.162~2.514)	0.003
Postoperative analgesia	1.214	0.378	12.175	3.528(3.657~3.736)	0.000
Catheters were placed after induction	1.415	0.348	17.829	4.146(3.873~4.784)	0.000

扎之扯动伤口导致手术失败,危及患者性命^[13,14]。EA 的临床报道率不一,周楠等学者^[15]报道麻醉恢复室内成年患者EA 的发生率高达 28.7%,而童珊珊等学者^[16]报道的 127 例患者在麻醉恢复室的 EA 发生率为 6.18%。本次研究入选的 100 例麻醉恢复室患者中,EA 的发生率为 13.00%,与其他研究结论存在差异的原因可能与研究对象、统计例数等不同有关。此外,观察本次研究以及他人研究中有关 EA 的发生率,发现 EA 的发生不可避免,若能掌握 EA 发生的危险因素,并给予预防性防护措施可有效降低 EA 发生率。

本次研究证实,POCD 组患者 EA 的发生率明显高于非 POCD 组,由于 EA 主要发生在术后 1h 内,此时间段内患者呼吸道维持不良、血氧饱和度低、意识状态较差,更易造成气体交换不佳引发的脑组织短暂缺血缺氧^[17-19]。单因素分析结果可知,EA 的发生与多种因素有关,进一步的多因素结果调查发现,男性、年龄 $\geq$ 60 岁、ASA 分级为 III 级、术后无镇痛、诱导后放置导尿管为 EA 发生的危险因素。男性患者 EA 发生率更高可能是因为相对于女性而言,男性的耐受疼痛程度更低^[20]。但也有学者认为^[21],女性对疼痛更敏感,疼痛阈值较低,男性的患者 EA 发生率更高也可能是与大脑结构、基因、性激素以及社会因素等有关^[22]。年龄 $\geq$ 60 岁的 EA 发生率更高,可能是因为随着年龄的增加,老年患者体质较差,疼痛耐受力比中青年患者低,且存在褪黑素的分泌异常这一情况,进而导致 EA 的发生^[23]。ASA 分级越高的患者 EA 发生的风险更高,主要是因为 ASA 分级越高,患者体质越差,围术期时的各种操作可引起人体心率与血压波动,故手术期间不好控制麻醉剂量,导致麻醉深度较浅,进而引发 EA^[24,25]。疼痛是导致躁动的重要因素,术后若未能给予有效镇痛,强烈的疼痛可引发心率增加、血压上升,导致 EA^[26,27]。导尿管留置会刺激患者尿道神经,导致患者有明显的解小便欲望,而此类刺激可反射至神经中枢,导致神经中枢兴奋性增加,增加 EA 发生风险^[28,29],而未放置导尿管可减少尿道刺激,诱导前导尿则可帮助患者提前适应应激源刺激,手术结束后,患者已经处于良好的接受状态,但诱导后放置导尿管未能提高患者适应能力这一步骤,增加 EA 发生风险^[30]。针对麻醉 EA 的危险因素,临床工作人员可实施以下措施以预防 EA 的发生:术前评估患者身体情况,针对老年、男性、ASA 分级较高的患者应积极纠正患者呼吸系统、循环系统及血液系统相关疾病,以减少 EA 发生率。患者术后在病情允许的前提下,尽早拔除导尿管。术后对患者进行有效评估,给予恰当合理的镇痛方

案治疗。

综上所述,EA 的发生与多种因素有关,临床应对年龄 $\geq$ 60 岁、ASA 分级为 III 级、术后无镇痛、诱导后放置导尿管等因素予以关注并适当干预,同时 POCD 与 EA 的发生具有一定的关系。

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