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瑞芬太尼、芬太尼对小儿扁桃体切除术中应激反应和苏醒期躁动的影响

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摘要 目的:探讨瑞芬太尼、芬太尼对小儿扁桃体切除术中应激反应以及苏醒期躁动的影响。方法:选择 2012 年 1 月至 2012 年 12 月期间择期行扁桃体切除手术的患儿 80 例为研究对象,将其分随机为瑞芬太尼组(40 例)和芬太尼组(40 例),比较两组患者不同时间应激反应指标(ACTH、COR、IL-6)、苏醒时间、躁动评分、躁动发生率以及 RamSay 镇静评分,探讨两种麻醉药物的临床应用价值。结果:两组术前 ACTH、COR、IL-6 的基础应激指标比较,差别无统计学意义($P>0.05$)。瑞芬太尼组及芬太尼组术毕该三项指标较术前升高,术后 1d 较术毕有回落,差别有统计学意义($P<0.05$);瑞芬太尼组术毕、术后 1d 的各项指标均远远低于芬太尼组,差别有统计学意义($P<0.05$)。瑞芬太尼组苏醒时间明显少于芬太尼组,躁动评分明显低于芬太尼组,躁动发生率明显低于芬太尼组,RamSay 镇静评分明显高于芬太尼组,差别有统计学意义($P<0.05$)。结论:瑞芬太尼引起的应激反应明显弱于芬太尼组,且其苏醒期躁动情况明显优于芬太尼组,值得进一步推广应用。

关键词:瑞芬太尼;芬太尼;小儿扁桃体切除术;应激反应;苏醒期躁动

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The Influence of Remifentanyl and Fentanyl on Stress Response and Restlessness in Pediatric Tonsillectomy

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ABSTRACT **Objective:** To investigate the influence of remifentanyl and fentanyl on stress response and restlessness in pediatric tonsillectomy. **Methods:** 80 cases of children with tonsillectomy from January to December in 2012 were selected in the study, and all of them were randomly divided into two groups: the remifentanyl group (40 cases) and the fentanyl group (40 cases). The different time stress reaction Index (ACTH, COR, IL-6), recovery time, agitation score, the incidence of agitation and RamSay sedation score were compared between two groups. Effects of the clinical value between two narcotic drugs were investigated. **Results:** The differences of preoperative based stress indicators of ACTH, COR, IL-6 between two groups were not statistically significant ($P>0.05$). The levels of three indicators increased in the two group after surgery, and decrease in 1d after the surgery, the differences were statistically significant ($P<0.05$). Each indicator after surgery and in 1d after surgery in the remifentanyl group were lower than those in the fentanyl group. The recovery time in the remifentanyl group was significantly less than that in the fentanyl group. The incidence of agitation score and restlessness in the remifentanyl group were significantly lower than those in the fentanyl group, RamSay sedation score in the remifentanyl group was significantly higher than that in the fentanyl group, the differences were statistically significant ($P<0.05$). **Conclusion:** The stress response of remifentanyl is significantly weaker than fentanyl, its restlessness is better than fentanyl, thus it is worthy of further promotion.

Key words: Remifentanyl; Fentanyl; Pediatric Tonsillectomy; Stress Response; Restlessness

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前言

小儿扁桃体切除术是涉及咽喉、呼吸道手术,对术中麻醉深度要求高,要求苏醒期安全平稳^[1,2],患儿的应激反应以及术后躁动对生理方面造成的伤害不容忽视,例如呛咳、呕吐等易引起咽部创面出血、反流、误吸,同时增加了呼吸道阻塞或窒息的风险^[3-5]。为更好的治疗患儿,提高麻醉效果,确保患儿手术期

安全,笔者选取我院收治的小儿扁桃体切除术患者为研究对象,开展如下研究:

1 资料与方法

1.1 研究对象

选择 2012 年 1 月至 2012 年 12 月期间择期行扁桃体切除手术的患儿 80 例为研究对象,所有患儿的诊断均符合世界卫生组织的诊断标准^[6]。其中男 45 例,女 35 例,年龄 6~11 岁,平均(7.48±0.76)岁;体重 16~42 kg,平均体重(20.34±2.16)kg。所有患儿经术前检查,排除具有心、肺、肝、肾、血液及内分泌系统疾病的患儿。

1.2 研究方法

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采用对照研究,对患儿进行排序,利用随机数表将其分为瑞芬太尼组(40例)和芬太尼组(40例)。两组患儿性别、年龄、手术原因及病程等基本资料差别无统计学意义($P>0.05$),具有可比性。两组患儿术前均常规肌注阿托品($0.01\sim 0.02$) mg/kg,开放静脉通路,并做好患儿手术期间无创血压、脉搏、血氧饱和度以及心电图监测。比较两组患者不同时间应激反应指标(CTH、COR、IL-6)、苏醒时间、躁动评分、躁动发生率以及RamSay镇静评分,探讨两种麻醉药物的临床应用价值。

1.3 统计学方法

采用SPSS17.0为统计学分析软件对数据进行分析处理,

计量资料采用t检验,计数资料采用 χ^2 检验,以 $P<0.05$ 为差别有统计学意义。

2 结果

2.1 应激反应指标比较

两组术前CTH、COR、IL-6的基础应激指标比较,差别无统计学意义($P>0.05$),具有可比性。瑞芬太尼组及芬太尼组术毕该三项指标较术前升高,术后1d较术毕有回落,差别有统计学意义($P<0.05$);瑞芬太尼组术毕、术后1d的各项指标均远远低于芬太尼组,差别有统计学意义($P<0.05$),详见表1。

表1 两组患者不同时间应激反应指标比较

Table 1 Comparison of stress response indicator at different time between two groups

指标 Index	瑞芬太尼组 Remifentanyl Group			芬太尼组 Fentanyl Group		
	术前	术毕	术后1d	术前	术毕	术后1d
	Preoperative	After surgery	1d after surgery	Preoperative	After surgery	1d after surgery
CTH(pg/mL)	119.35± 11.87	1303.64± 112.79*	56.89± 5.83* [#]	121.88± 11.92	1709.16± 165.48*	133.85± 13.05* [#]
COR(L/g/dL)	24.81± 2.61	39.68± 3.64*	43.67± 4.31* [#]	23.15± 2.49	61.34± 8.50*	40.39± 9.14* [#]
IL-6(pg/mL)	5.79± 0.50	22.85± 2.63*	16.79± 2.05* [#]	5.65± 0.56	56.29± 5.36*	20.94± 6.97* [#]

注:*与术前比较,差别有统计学意义($P<0.05$);[#]与术毕比较,差别有统计学意义($P<0.05$);[#]两组间比较差别有统计学意义($P<0.05$)。

Note: * Compared with the preoperative, the difference was statistically significant ($P<0.05$); [#] compared with after surgery, the difference was statistically significant ($P<0.05$); [#] the difference between the two groups was statistically significant ($P<0.05$).

2.2 苏醒期躁动情况比较

苏醒时间比较,瑞芬太尼组明显少于芬太尼组,差别有统计学意义($t=5.67$, $P<0.05$);躁动评分比较,瑞芬太尼组明显低于芬太尼组,差别有统计学意义($t=3.29$, $P<0.05$);躁动发生率

比较,瑞芬太尼组明显低于芬太尼组,差别有统计学意义($\chi^2=0.17$, $P<0.05$);RamSay镇静评分比较,瑞芬太尼组明显高于芬太尼组,差别有统计学意义($\chi^2=0.17$, $P<0.05$),详见表2。

表2 两组患者苏醒期躁动情况比较

Table 2 Comparison of emergence agitation between the two groups

指标 Index	瑞芬太尼组 Remifentanyl Group	芬太尼组 Fentanyl Group
苏醒时间(min) Recovery time	13.38± 1.32	15.22± 1.41
躁动评分(分) Restlessness ratings	1.32± 0.14	2.34± 0.27
躁动发生率(%) The incidence of agitation	2(5.00)	7(17.50)
RamSay镇静评分 RamSay sedation score	3.93± 0.34	2.19± 0.25

3 讨论

扁桃体切除术是小儿外科常见手术之一,因患者为儿童,痛阈低,对疼痛敏感,控制力差,难以较好配合手术、易躁动,容易导致手术切除不彻底、术后容易发生出血等并发症^[7-10],所以,对小儿扁桃体切除手术多数采用全身麻醉^[11]。而寻找适合的麻醉诱导药物、最大程度地降低应激反应,提高术后苏醒质量,降低躁动率发生,对于小儿患者安全平稳地接受扁桃体切除手术具有重要意义。

本次研究中,选用瑞芬太尼与芬太尼作为麻醉药物进行对比,结果表明,瑞芬太尼组术毕、术后1d的CTH、COR、IL-6均远远低于芬太尼组,差别有统计学意义($P<0.05$),提示前者引起的应激反应明显弱于芬太尼组,而瑞芬太尼组苏醒时间明显少于芬太尼组,躁动评分明显低于芬太尼组,躁动发生率明显低于芬太尼组,RamSay镇静评分明显高于芬太尼组,差别有统计学意义($P<0.05$),提示前者苏醒期躁动情况明显优于芬太尼组。瑞芬太尼是一种新型阿片类受体激动剂,其代谢经血液和组织中非特异性酯酶水解^[12-15],具有作用时间短(其血脑平衡

时间短, 血浆和作用部位血药浓度达到平衡的半时值仅为 1-2min, 而芬太尼却为 6.6min), 消除快 (消除半衰期为 3-10min) 的优点^[16,17], 且不受抗胆碱酯酶药物和非去极化肌松剂的影响, 为控制手术中不良应激反应, 降低术后躁动发生率, 可优先选用瑞芬太尼。

综上所述, 研究瑞芬太尼在小儿扁桃体摘除术中应激反应及苏醒期躁动控制方面比芬太尼更具有优越性, 同时也具有控性强、起效迅速、作用时间短、镇痛作用显著、对循环干扰小、恢复迅速、无蓄积、不良反应少等优点^[18-20], 值得进一步推广应用。

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