

瑞马唑仑与右美托咪定在宫腔镜手术中的麻醉效果比较

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摘 要

目的: 比较瑞马唑仑与右美托咪定在宫腔镜手术中的麻醉效果。方法: 采用随机、单盲的对照研究方法, 选择2021年3~9月宫腔镜手术麻醉患者60例, 随机数字表法分为两组: R组(瑞马唑仑组)和D组(右美托咪定组)。受试者静脉注射枸橼酸舒芬太尼10 μg 进行镇痛预处理。D组盐酸右美托咪定注射液负荷量1 $\mu\text{g}/\text{kg}$, 泵注10 min后, 维持剂量为: 0.5 $\mu\text{g}/(\text{kg}\cdot\text{h})$ 。R组苯磺酸瑞马唑仑7 mg, 之后维持剂量为1 $\text{mg}/(\text{kg}\cdot\text{h})$ 。之后两组给予8%的七氟烷吸入麻醉, 在患者意识消失以后, 咬肌松弛时插入喉罩, 术中保留患者自主呼吸, 维持七氟烷浓度在2%~3%左右。记录入室后直至操作结束受试者生命体征稳定后的心率、平均动脉压、bis值的差异、诱导时置入喉罩的时间、苏醒时间。结果: 麻醉后D组相较于R组心率、bis值、平均动脉压波动幅度更低, 差异有统计学意义($P < 0.05$), R组相较于D组诱导时置入喉罩所需时间更短, 复苏时间更短, 差异均有统计学意义($P < 0.05$)。结论: 本研究发现瑞马唑仑和右美托咪定均可为宫腔镜手术提供有效的镇静, 但瑞马唑仑用于宫腔镜的安全性及效率优于右美托咪定。

关键词

瑞马唑仑, 右美托咪定, 镇静, 宫腔镜手术

Comparison of Anesthetic Effects of Remimazolam and Dexmedetomidine in Hysteroscopic Surgery

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Abstract

Objective: To compare the anesthetic effect of remimazolam and dexmedetomidine in hysteroscopic surgery. **Methods:** Using a randomized, single-blind control study, 60 patients undergoing hysteroscopic anesthesia from March to September 2021 were randomly divided into two groups: R (remimazolam) and D (dexmedetomidine). All subjects were analgesic pretreated with intravenous sufentanil 10 ug citrate. In Group D, use of dexmedetomidine hydrochloride injection was 1 ug/kg, load pump for 10 min, maintenance dose: 0.5 ug/(kg h) and group R intravenous 7 mg, maintenance dose: 1 mg/(kg h). Both groups were then given inhaled anesthesia with an 8% sevoflurane mask, and the laryngeal mask was started after the patient's consciousness disappeared and the masseter muscle was relaxed with retained autonomous breathing. The intraoperative sevoflurane concentration was maintained from 2% to 3%, and the heart rate, mean arterial pressure, difference in bis value, time of laryngeal mask at induction, and recovery time after the subject had stable vital signs until the end of the operation were recorded. **Results:** Group D had lower heart rate, bis value and mean arterial pressure, significantly ($P < 0.05$), shorter recovery time and shorter recovery time than group D ($P < 0.05$). **Conclusions:** This study found that both remimazolam and dexmedetomidine provide effective sedation for hysteroscopic surgery, but remimazolam is better safe than that for hysteroscopy.

Keywords

Remimazolam, Dexmedetomidine, Sedation, Hysteroscopic Surgery

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1. 前言

宫腔镜手术过程中由于宫颈和宫腔扩张给患者诊疗过程带来不同程度的不适和疼痛,且术后疼痛明显,常需要静脉麻醉。常用的药物有丙泊酚、咪达唑仑、右美托咪定以及阿片类药物等。右美托咪定是高选择性 α_2 受体激动剂,近年来,右美托咪定因其具有较强的镇静、镇痛作用,同时呼吸抑制小的优点,被经常应用在门诊手术中[1] [2] [3] [4] [5]。苯磺酸瑞马唑仑(CNS 7056)是一种新型的苯二氮卓类药物,它作用于中枢 GABA_A 受体,具有起效快、无蓄积、不经过肝脏代谢等优点[6] [7] [8] [9] [10],临床应用前景良好。但国内外对瑞马唑仑与右美托咪定在宫腔镜手术镇静麻醉中的比较研究较少。本研究将采用随机、单盲的对照研究方法,比较瑞马唑仑与右美托咪定分别联合舒芬太尼应用于宫腔镜手术中的有效性和安全性,以及对血流动力学的影响,为临床应用提供理论依据。

2. 资料与方法

2.1. 一般资料

本研究通过我院医学伦理委员会批准,并与患者签署知情同意书。选取 2021.3~2021.9 宫腔镜手术麻醉患者 60 例为对象进行分组。患者年龄 18~55 岁;身体质量指数(BMI) 18~25 kg/m²,美国麻醉医师协会(American Anesthesiologists Association, ASA)分级为 I 级和 II 级,无精神疾病,无慢性疼痛及阿片类药物、酒精滥用史,无呼吸系统病史和心血管病史。

2.2. 方法

所有患者随机分为两组 R 组(瑞马唑仑组)和 D 组(右美托咪啶组), 术前常规禁饮禁食。入室后连续监测患者平均动脉压(MAP)、心率(HR)及 bis 值。擦拭患者前额皮肤, 连接 BIS 电极片, 记录患者麻醉前的基础值。并使用面罩吸氧, 氧流量 2~4 L/min。所有受试者静脉注射枸橼酸舒芬太尼 10 ug 进行镇痛预处理。D 组用盐酸右美托咪啶注射液负荷量 1 $\mu\text{g}/\text{kg}$, 泵注 10 min 后, 维持剂量为: 0.5 $\mu\text{g}/(\text{kg}\cdot\text{h})$ 。R 组静脉给予苯磺酸瑞马唑仑 7 mg, 之后维持剂量为 1 $\text{mg}/(\text{kg}\cdot\text{h})$ 。之后两组给予 8% 的七氟烷吸入麻醉, 在患者意识消失以后, 咬肌松弛时插入喉罩, 术中保留患者自主呼吸。期间氧流量吸入约 2 L/min, 维持七氟烷浓度在 2%~3% 左右。

2.3. 观察指标

比较两组患者的宫腔镜手术中麻醉前(T_0)和麻醉后(每隔 10 min 记录一次)患者平均动脉压、心率、bis 值的差异、诱导时置入喉罩的时间以及苏醒的时间。

2.4. 统计学处理

采用 SPSS19.0 统计学软件对数据进行统计学分析, 采用 t 检验, 计量资料以($\bar{x} \pm s$)表示; 用 χ^2 检验, $P < 0.05$ 为差异有统计学意义。

3. 结果

3.1. 麻醉前后两组心率、平均动脉压、bis 值比较

麻醉前(T_0)两组心率、平均动脉压、bis 值比较差异无统计学意义($P > 0.05$); 麻醉后 D 组相较于 R 组心率、bis 值、平均动脉压波动幅度更低, 差异有统计学意义($P < 0.05$), 见表 1~3。

Table 1. Comparison of heart rate between the two groups

表 1. 两组心率(HR)的比较

HR (次/分)	T_0	T_1	T_2	T_3	T_4
R 组	75.27 \pm 2.46	71.36 \pm 1.75	69.49 \pm 2.31	68.12 \pm 3.14	70.35 \pm 1.98
D 组	74.35 \pm 2.27	68.35 \pm 1.98	65.47 \pm 2.46	63.09 \pm 3.36	65.46 \pm 3.21

Table 2. Comparison of bispectral index between the two groups

表 2. 两组 bis 值的比较

	T_0	T_1	T_2	T_3	T_4
R 组	98.24 \pm 0.58	62.13 \pm 1.69	57.71 \pm 2.76	55.89 \pm 2.18	86.61 \pm 1.78
D 组	98.67 \pm 0.62	60.24 \pm 2.31	55.42 \pm 1.28	50.73 \pm 3.35	85.25 \pm 2.15

Table 3. Comparison of mean arterial pressure between the two groups

表 3. 两组平均动脉压(MAP)的比较

MAP (mmHg)	T_0	T_1	T_2	T_3	T_4
R 组	105.91 \pm 2.14	103.64 \pm 2.42	99.28 \pm 2.52	98.78 \pm 1.56	100.45 \pm 1.98
D 组	102.49 \pm 1.51	95.96 \pm 2.71	91.19 \pm 2.45	90.28 \pm 2.13	95.51 \pm 1.64

3.2. 两组患者诱导时置入喉罩时间、复苏时间比较

R 组相较于 D 组诱导时置入喉罩所需时间更短，复苏时间更短，差异均有统计学意义($P < 0.05$)，见表 4。

Table 4. Comparison of induction time and recovery time between the two groups

表 4. 两组诱导时间和复苏时间的比较

按泵入右美开始算:		
	诱导时间(min)	复苏时间(min)
R 组	2.54 ± 0.36	3.02 ± 0.98
D 组	12.25 ± 0.57	5.86 ± 1.07
按吸入七氟烷开始算:		
	诱导时间(min)	复苏时间(min)
R 组	1.26 ± 0.58	3.02 ± 0.98
D 组	2.25 ± 0.37	5.86 ± 1.07

4. 讨论

宫腔镜手术的麻醉应遵循平稳、起效苏醒快速、镇静完善的原则，因此，临床上经常选择保留自主呼吸下喉罩全麻。喉罩置入比气管插管快且操作方便，不需使用喉镜，同时喉罩不接触声带，避免了对咽喉和气管造成机械性损伤，可显著降低术后咽喉疼痛和声音嘶哑的发生率[11]。右美托咪定可产生稳定的镇定和觉醒作用，但右美托咪定静脉缓慢注射可激活血管中枢 α_2 受体，抑制去甲肾上腺素释放，迷走神经活性相对增强，表现为血压、心率减慢。苯磺酸瑞马唑仑消除半衰期短、不依赖于细 P450 酶代谢，与同类麻醉药物相比，起效更快，代谢更快，且代谢产物无活性，药物之间的相互作用较弱[12]，用于临床治疗和诊断性操作镇静均具有较好的有效性和安全性。

本研究中，D 组给予七氟烷吸入联合右美托咪定静脉泵入，R 组则给予七氟烷吸入联合瑞马唑仑静脉泵入。结果显示，麻醉后 R 组相较于 D 组的平均动脉压和心率、bis 值波动幅度明显更低，可见瑞马唑仑在麻醉过程中可使血流动力学更加稳定，没有明显地减慢心率的副作用。同时二者均能有效减轻喉罩置入时的血流动力学应答，R 组较于 D 组，诱导过程中喉罩置入时间更短，苏醒更快，说明瑞马唑仑较右美托咪定起效快，减少了达到理想麻醉深度的时间，镇静效果好，同时苏醒质量好，苏醒快，不会对术后清醒时间造成影响。

综上所述，瑞马唑仑和右美托咪定均能在宫腔镜手术中起到良好的、安全有效的镇静作用，瑞马唑仑在麻醉手术中引起的血流动力学波动更小，并且起效和苏醒时间更快，作为一种新型的镇静药，显示出极大的应用潜力。

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