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顺阿曲库铵与右美托咪定在腹腔镜全子宫切除术中的效果 及对 ATIII、D-D、FDP、Cor 的影响 *

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摘要 目的:研究顺阿曲库铵与右美托咪定在腹腔镜全子宫切除术中的效果及对抗凝血酶 III(AT III)、D-二聚体(D-D)、纤维蛋白降解产物(FDP)、皮质醇(Cor)的影响。**方法:**选取 2014 年 8 月至 2015 年 7 月在我院行腹腔镜全子宫切除术的 86 例患者,根据患者入院顺序分为观察组和对照组,42 例每组。对照组经顺阿曲库铵完成麻醉,观察组经右美托咪定完成麻醉。比较两组患者生命体征、麻醉相关指标、镇痛镇静效果、血清 ATIII、D-D、FDP、Cor 水平及不良反应的发生情况。**结果:**拔管后 1 min,两组患者动脉氧分压、氧饱和度与麻醉前相比差异无统计学意义($P>0.05$),心率、平均脉压水平较麻醉前显著升高($P<0.05$),和对照组相比,观察组心率、平均脉压水平较低($P<0.05$)。观察组拔管时间、自主呼吸恢复时间显著短于对照组($P<0.05$),两组患者苏醒时间比较无显著差异($P>0.05$)。两组术后 2 h、12 h、24 h 的 Ramsay 评分、VAS 评分在组间、不同时间点、组间不同时间点交互效应比较差异有统计学意义($P<0.05$),两组术后 2 h、12 h、24 h 的 Ramsay 评分均呈上升趋势,观察组始终高于对照组,两组术后 2 h、12 h、24 h 的 VAS 评分均呈下降趋势,观察组始终低于对照组,差异有统计学意义($P<0.05$)。观察组寒战、呕吐、恶心、眩晕不良反应率显著低于对照组($P<0.05$)。**结论:**相对于顺阿曲库铵,在腹腔镜全子宫切除术中应用右美托咪定更能有效稳定患者血清 ATIII、D-D、FDP、Cor 水平,镇痛镇静效果良好,安全性高。

关键词:顺阿曲库铵;右美托咪定;全子宫切除术**中图分类号:**R713.42;R614 **文献标识码:**A **文章编号:**1673-6273(2018)06-1176-05

Comparison of Clinical Efficacy of CisatRIPTAN and Dexmedetomidine in Laparoscopic Hysterectomy and Effect on Serum ATIII, D-D, FDP and Cortisol Levels*

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ABSTRACT Objective: To compare the clinical efficacy of cisatRIPTAN and dexmedetomidine in the laparoscopic hysterectomy and the effect on the serum antithrombin III (AT III), D-dimer (DD), fibrin degradation Product (FDP), cortisol (Cor) levels. **Methods:** From August 2014 to July 2015, 86 cases of patients underwent laparoscopic hysterectomy in our hospital were divided into the observation group and the control group according to the order of admission. The control group was treated with triptolide, and the observation group was treated with dexmedetomidine. The vital signs, anesthesia-related indicators, analgesic sedation, serum ATIII, D-D, FDP, Cor levels and incidence of adverse reactions were compared between two groups. **Results:** At 1 min after extubation, compared with anesthesia, there was no significant difference in arterial oxygen partial pressure and oxygen saturation between the two groups ($P>0.05$). The heart rate and mean pulse pressure were significantly higher than those before anesthesia ($P<0.05$). Compared with the control group, the heart rate and mean pulse pressure of the observation group were lower ($P<0.05$). The duration of extubation and spontaneous respiration were significantly shorter in the observation group than those in the control group ($P<0.05$), there was no significant difference in the awakening time between the two groups ($P>0.05$). There was significant difference in the Ramsay score and VAS score between the two groups at 2h, 12h and 24h after operation ($P<0.05$). The difference between the two groups was statistically significant ($P<0.05$). The Ramsay scores of the two groups were higher than those of the control group. The VAS scores of the two groups were lower than those of the control group at 2h, 12h and 24h respectively. The observation group was always lower than the control group ($P<0.05$). There was significant difference between different time points, between groups and between different time points ($P<0.05$). The adverse reactions rate of chills, vomiting, nausea and vertigo in the observation group were significantly lower than those in the control group ($P<0.05$).

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Conclusion: Compared with cisatRIPTAN, dexmedetomidine can more effectively stabilize the serum AT III, D-D, FDP, Cor levels with good analgesic sedative effect is good and high safety in the laparoscopic hysterectomy.

Key words: CisatRIPTAN; Dexmedetomidine; Total hysterectomy

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前言

全子宫切除术属于妇科较为常见的一种术式,经阴道、经腹行全子宫切除术属于较为常见的一种传统手术路径。随着医学技术的不断进步与发展,腹腔镜在子宫切除术中得到广泛应用^[1]。腹腔镜全子宫切除术具有疼痛轻、术后恢复快、创伤小、住院时间短等优势,且并发症较少^[2]。有研究者提出子宫切除术患者借助腹腔镜能缩短自主活动恢复时间、胃肠功能恢复时间及减少术中出血量^[3]。腹腔镜手术作为粉碎工具可能会扩散术前未检出的肿瘤,因此在子宫切除术患者行腹腔镜术前应将恶性肿瘤排除在外^[4]。相关研究者提出右美托咪定能保护器官,避免瑞芬太尼痛觉过敏、丙泊酚注射痛的功能。同时,右美托咪定能缩短躁动型谵妄患者的机械通气时间^[5,6]。为给临床麻醉提供借鉴之处,本研究主要比较了顺阿曲库铵与右美托咪定在腹腔镜全子宫切除术中的效果及对血清抗凝血酶 III(AT III)、D-二聚体(D-D)、纤维蛋白降解产物(FDP)、皮质醇(Cor)水平的影响,现将结果报道如下。

1 资料与方法

1.1 临床资料

将 2014 年 8 月至 2015 年 7 月在我院开展腹腔镜全子宫切除术的患者 86 例纳入本次研究,纳入标准:① 经期异常且子宫出血时间超过 8 天;② 子宫腺肌病、子宫肌瘤等良性病变;③ 无生育要求者。排除标准:① 妇科恶性肿瘤疾病者;② 生殖系统急性炎症者;③ 身体重要脏器疾病,同时难以耐受麻醉、手术治疗者;④ 盆腔粘连严重合并者,同时难以开展腹腔镜操作者。本次研究已取得我院伦理委员会批准,及得到患者及家属同意。根据患者入院顺序分为观察组和对照组,42 例每组。观察组年龄为 45~54 岁,平均(48.98±0.96)岁;体重指数为 20.34~26.34 kg/m²,平均(23.21±0.95)kg/m²;孕次为 1~4 次,平均(2.58±0.52)次;疾病类型:功能性子宫出血 3 例,子宫肌瘤合并腺肌病 4 例,子宫腺肌病 12 例,子宫肌瘤 23 例;疾病合并症:高血压 1 例,糖尿病 3 例,肥胖 4 例;既往疾病史:输卵管结扎 1 例,阑尾手术 2 例,剖宫产史 3 例,盆腔手术史 7 例。对照组年龄为 46~55 岁,平均(49.01±0.93)岁;体重指数为 20.37~26.38 kg/m²,平均(23.26±0.93)kg/m²;孕次为 1~5 次,平均(2.61±0.53)次;疾病类型:功能性子宫出血 4 例,子宫肌瘤合并腺肌病 3 例,子宫腺肌病 11 例,子宫肌瘤 24 例;疾病合并症:高血压 2 例,糖尿病 4 例,肥胖 3 例;既往疾病史:输卵管结扎 2 例,阑尾手术 1 例,剖宫产史 4 例,盆腔手术史 6 例。两组年龄、体重、孕次等方面比较差异无统计学意义(P>0.05),具有可比性。

1.2 治疗方法

在患者入室后,取平卧位,叮嘱患者放松精神,以消除紧张情绪,对患者的脉搏血氧饱和度、心率、血压进行常规监测,建

立静脉通路。麻醉诱导:静脉注射 2 mg/kg 丙泊酚、3 μg/kg 芬太尼、0.05 mg/kg 咪达唑仑,当患者意识消失后,对照组静脉注射 0.1 mg/kg 顺阿曲库铵(生产厂家:江苏恒瑞医药股份有限公司,规格:10 mg/瓶,生产批号:20140205),观察组静脉注射液 1 μg/kg 右美托咪定(生产厂家:江苏恒瑞医药股份有限公司,规格:2 mL:200 μg,生产批号:20140209)。气管插管一次成功后控制呼吸时使用麻醉机,潮气量为 8~10 mL/kg,呼吸比为 1:2,频率为 12~15 次/min。术中持续泵注 0.1~0.2 μg/(kg·min)瑞芬太尼,4~6 mg/(kg·h)的丙泊酚,持续吸入七氟烷 2%~3%,对照组间断静脉注射 4 mg 的顺阿曲库铵;观察组静脉注射 0.5 μg/(kg·h)的右美托咪定,使 PETCO₂ 维持在 30~40 mmHg 之间。本次手术均是在同一组操作人员下完成,采取 Trendelenburg 体位,将气腹压力维持在 12~15 mmHg 之间。

1.3 观察指标

1.3.1 生命体征 在诱导麻醉前、拔管后 1 min 监测两组患者动脉氧分压、氧饱和度、心率、平均脉压水平。

1.3.2 麻醉相关指标分析 比较两组患者拔管时间、自主呼吸恢复时间、苏醒时间。

1.3.3 镇静和镇痛效果评价 通过 Ramsay 镇静评分和视觉模拟评分(VAS)比较两组患者术后 2、12、24 h 镇静和镇痛效果。Ramsay 镇静评分标准如下:烦躁不安则为 1 分,清醒则为 2 分,嗜睡则为 3 分,浅睡眠状态则为 4 分,入睡则为 5 分,深睡则为 6 分,<2 分则为镇静不全,2~4 分则为镇静适宜,>4 分则为镇静过度^[7]。VAS 评分标准如下:无痛则为 0 分;轻微疼痛则为 3 分以下,但能忍受;疼痛同时会对睡眠造成影响,但能忍受则为 4~6 分;剧烈疼痛同时难以忍受,并且会影响睡眠和食欲则为 7~10 分^[8]。

1.3.4 血清 ATIII、D-D、FDP、Cor 水平检测 比较两组患者麻醉前、术后 24 h 抗凝血酶 III(AT III)、D-二聚体(D-D)、纤维蛋白降解产物(FDP)、皮质醇(Cor)水平,分别在麻醉前、术后 24 h 抽取两组患者 5 mL 的空腹静脉血,转速 3000 r/min,离心 15 min,分离血清后,使用酶联免疫吸附法检测 AT III、D-D、FDP 水平,使用化学发光法检测 Cor 水平。

1.3.5 不良反应分析 分析两组患者躁动、寒战、心动过缓、呕吐、恶心、眩晕、过度镇静反应等不良反应的发生情况。

1.4 统计学处理

选取 spss11.5 软件包对本次实验数据予以处理,计量资料以($\bar{x} \pm s$)表示,组间比较采用 t 检验,计数资料以[n(%)]表示,组间比较采用 χ^2 检验,以 P<0.05 为差异有统计学意义。

2 结果

2.1 两组患者生命体征的比较

麻醉前,两组患者动脉氧分压、氧饱和度、心率、平均脉压水平比较无显著差异(P>0.05),拔管后 1 min,两组患者动脉氧

分压、氧饱和度和麻醉前相比无显著差异($P>0.05$), 心率、平均 心率、平均脉压水平较低($P<0.05$), 见表 1。
脉压水平较麻醉前显著升高($P<0.05$), 和对照组相比, 观察组的

表 1 两组患者生命体征分析($\bar{x}\pm s$)

Table 1 Analysis of vital signs between two groups($\bar{x}\pm s$)

Items	Observation group(n=43)		Control group(n=43)	
	Before anesthesia	1 min after extubation	Before anesthesia	1 min after extubation
PaO ₂ (mmHg)	95.34± 9.16	95.43± 9.19	95.38± 9.18	95.48± 9.21
SPO ₂ (%)	91.24± 9.05	91.37± 9.45	91.28± 9.06	91.41± 9.48
HR(time/min)	82.15± 8.03	91.24± 9.25 [#]	82.16± 8.05	104.32± 12.43 [*]
MAP(mmHg)	92.29± 9.15	99.45± 9.76 [#]	92.32± 9.18	114.87± 11.25 [*]

Note: Compared with before anesthesia, ^{*} $P<0.05$; Compared with control group 1 min after extubation, [#] $P<0.05$.

2.2 两组患者麻醉相关指标的比较

($P<0.05$), 两组患者苏醒时间比较无显著差异($P>0.05$), 见表 2。

观察组的拔管时间、自主呼吸恢复时间显著短于对照组

表 2 两组患者麻醉相关指标分析($\bar{x}\pm s$)

Table 2 Analysis of anesthesia related indicators between two groups($\bar{x}\pm s$)

Groups	Extubation time(min)	Spontaneous breathing recovery time(min)	Wake up time(min)
Observation group(n=43)	7.63± 0.75 [*]	3.87± 0.39 [*]	13.76± 1.25
Control group(n=43)	12.35± 1.36	6.85± 0.69	13.79± 1.28

Note: Compared with control group, ^{*} $P<0.05$.

2.3 两组患者镇静和镇痛效果的比较

两组术后 2h、12h、24h 的 Ramsay 评分、VAS 评分在组间、
不同时间点、组间·不同时间点交互效应比较差异有统计学意义($P<0.05$), 两组术后 2h、12h、24h 的 Ramsay 评分均呈上升趋势

势, 观察组始终高于对照组, 两组术后 2h、12h、24h 的 VAS 评分均呈下降趋势, 观察组始终低于对照组, 两组在组间、不同时间点、组间·不同时间点交互效应比较差异有统计学意义($P<0.05$), 见表 3。

表 3 两组患者镇静和镇痛效果分析($\bar{x}\pm s$)

Table 3 Analysis of the sedation and analgesic effect between two groups($\bar{x}\pm s$)

Groups	Ramsay score			VAS score		
	Postoperative 2h	Postoperative 12h	Postoperative 24h	Postoperative 2h	Postoperative 12h	Postoperative 24h
Observation group(n=43)	2.43± 0.27 [*]	2.58± 0.34 [*]	3.41± 0.38 [*]	2.35± 0.29 [*]	2.11± 0.23 [*]	1.42± 0.13 [*]
Control group(n=43)	1.52± 0.15	1.98± 0.19	2.15± 0.25	3.87± 0.38	2.79± 0.26	2.01± 0.14

Note: Compared with control group, ^{*} $P<0.05$.

2.4 两组患者血清 AT III、D-D、FDP、Cor 水平的比较

麻醉前, 两组患者血清 AT III、D-D、FDP、Cor 水平比较差异无统计学意义($P>0.05$); 术后 24h, 两组患者血清 AT III 水平

较麻醉前显著降低($P<0.05$), 血清 D-D、FDP、Cor 水平较麻醉前显著升高($P<0.05$), 和对照组相比, 观察组的血清 AT III 水平较高($P<0.05$), 血清 D-D、FDP、Cor 水平较低($P<0.05$), 见表 4。

表 4 两组患者血清 AT III、D-D、FDP、Cor 水平的分析($\bar{x}\pm s$)

Table 4 Analysis of the serum AT III, D-D, FDP, Cor levels between two groups($\bar{x}\pm s$)

Items	Observation group(n=43)		Control group(n=43)	
	Before anesthesia	Postoperative 24h	Before anesthesia	Postoperative 24h
AT III(%)	103.21± 10.54	82.43± 8.65 [*]	103.29± 10.59	73.46± 7.51 [*]
D-D(μg/L)	1.15± 0.16	12.32± 1.54 [*]	1.16± 0.14	17.65± 2.05 [*]
FDP(μg/mL)	4.54± 0.48	14.76± 1.53 [*]	4.58± 0.51	23.16± 2.32 [*]
Cor(ng/L)	114.45± 11.34	128.57± 12.27 [*]	114.49± 11.64	145.98± 15.02 [*]

Note: Compared with before anesthesia, ^{*} $P<0.05$; Compared with control group postoperative 24h, [#] $P<0.05$.

2.5 两组患者不良反应发生情况的比较

两组患者躁动、心动过缓、过度镇静比较无显著差异($P>0.05$),观察组的寒战、呕吐、恶心、眩晕不良反应率低于对照组($P<0.05$),见表 5。

表 5 两组患者不良反应发生情况的比较[n(%)]

Table 5 Comparison of the incidence of adverse reactions between two groups[n(%)]

Groups	Restless	Chills	Bradycardia	Vomiting	Nausea	Dizziness	Excessive sedation
Observation group(n=43)	0(0.00)	1(2.33)*	0(0.00)	2(4.65)*	3(6.98)*	3(6.98)*	4(9.30)
Control group(n=43)	2(4.65)	7(16.28)	1(2.32)	9(20.93)	13(30.23)	14(32.56)	5(11.63)

Note: Compared with control group, * $P<0.05$.

3 讨论

由于腹腔镜手术具有微创、美观的特点,在子宫切除术中已获得推广应用,但如何保证腹腔镜手术患者在术后的康复效果为舒适、快速尤为重要。手术过程中,患者会因组织受损和刺激而发生应激反应,引起血浆凝血因子水平相应上升,同时降低内源性凝血抑制物质水平,血小板活性有所加强^[9]。同时,机体纤溶系统会因为围术期应激反应以及高凝状态而发生亢进,凝血功能紊乱,明显增加出血及血栓有关的风险性。在麻醉科中,腹腔镜全子宫切除术作为常见的手术类型手术时间和方式较为固定,下腹部手术会因为较大的手术刺激,相对于其他手术部位,应激反应较为剧烈^[10,11]。因此,本研究中将腹腔镜全子宫切除术患者作为研究对象以此观察不同麻醉药物的有效性。

顺阿曲库铵作为阿曲库铵的顺-顺、反-反式同分异构体,相对于外消旋阿曲库铵,其药物活性更高,肌松强度是阿曲库铵的 3 倍^[12,13]。顺阿曲库铵有着维库溴铵对心血管影响小,同时具备阿曲库铵代谢的作用,组胺释放反应不明显,和维库溴铵相比,顺阿曲库铵的起效时间较长^[14,15]。右美托咪定作为高选择性 α_2 肾上腺素能受体激动药的代,具备明显的镇痛、镇静、抗焦虑效果,经协同作用而降低儿茶酚胺在血浆中的浓度,有利于围术期血流动力学维持在稳定状态^[16,17]。本研究通过对血清 AT III、D-D、FDP、Cor 值的变化进行分析以此探讨不同麻醉药物在腹腔镜全子宫切除术下对患者纤溶功能的影响。

相关研究显示在腹腔镜全子宫切除术中,经右美托咪定麻醉能有效改善患者术后纤溶亢进程度^[18]。本次研究结果显示:通过予以顺阿曲库铵与右美托咪定麻醉腹腔镜全子宫切除术患者,术后均伴有一定程度的纤溶亢进,血清 D-D、FDP、Cor 值较麻醉前有所升高,血清 AT III 值较麻醉前有所降低。同时,术后经右美托咪定注射的患者血清 D-D、FDP、Cor 水平略高于正常值,血清 AT III 水平略低于正常值,而经顺阿曲库铵麻醉的患者血清 D-D、FDP、Cor 值明显高于正常值,血清 AT III 值明显低于正常值,提示在腹腔镜全子宫切除术中经右美托咪定麻醉能有效缓解患者术后纤溶亢进程度,和上述研究者的观点具有一致性。究其原因主要是因为右美托咪定能有效阻碍交感神经过度兴奋和交感神经末梢释放去甲肾上腺素,有利于围术期血流动力学维持在稳定状态,进而避免心肌缺血^[19]。

相关研究显示右美托咪定麻醉可有效减轻患者全身性应激反应,其镇痛镇静效果较好^[20]。本次研究结果显示通过右美托咪定麻醉的患者在拔管后 1 min 心率、平均脉压基本上处于正常水平,而经顺阿曲库铵麻醉的患者,在拔管后 1 min 的心

率、平均脉压水平明显升高,提示右美托咪定麻醉能有效减轻患者全身性应激反应,同时右美托咪定的镇痛镇静效果显著优于顺阿曲库铵。

总之,相对于顺阿曲库铵,在腹腔镜全子宫切除术中应用右美托咪定更能有效稳定患者血清 AT III、D-D、FDP、Cor 水平,镇痛镇静效果良好,安全性高。

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