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间苯三酚复合羟考酮优化依托咪酯用于老年患者 宫腔镜检查的麻醉效果

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[摘要] 目的: 观察间苯三酚复合羟考酮优化依托咪酯在老年患者宫腔镜检查中的麻醉效果。方法: 选择2018年8月至2019年1月于我院行无痛宫腔镜检查的患者90例, 美国麻醉医师协会(ASA)分级II~III级, 年龄65~76岁, 体重48~63 kg, 随机分为3组(每组 $n=30$): 间苯三酚+羟考酮组(P组)、羟考酮组(O组)及对照组(C组)。宫腔镜检查前15 min, P组静脉注射间苯三酚80 mg, O组、C组静脉注射5%葡萄糖溶液20 mL。宫腔镜检查前5 min, P组、O组静脉注射间羟考酮, C组静脉注射0.9%氯化钠注射液5 mL。3组患者均静脉注射依托咪酯。术中出现皱眉或体动反应时, 静脉追加依托咪酯0.1 mg/kg。记录患者入室(T0)、注射间苯三酚或5%葡萄糖溶液后10 min(T1)、15 min(T2), 诱导后2 min(T3), 进镜后1 min(T4)及5 min(T5)各时间点生命体征。记录检查过程中皱眉或体动例数及依托咪酯的用量; 记录宫腔镜检查时间及苏醒时间; 记录低氧血症、头晕、恶心呕吐、肌阵挛等不良反应发生情况。结果: P组检查时间[(11.3±1.5) min]较O组[(15.1±2.6) min]、C组[(16.2±2.2) min]缩短($P<0.05$); P组苏醒时间[(4.3±1.1) vs (7.9±2.3) min]较C组缩短($P<0.05$); P组依托咪酯用量[(11.2±1.7) mg]较O组[(16.4±2.3) mg]、C组[(28.6±2.1) mg]减少($P<0.05$); P组皱眉或体动发生率[2 (7%)]较O组[9 (30%)], C组[17 (56%)]降低($P<0.05$); P组恶心呕吐[3 (10%) vs 12 (40%)]及肌阵挛[1 (3%) vs 10 (33%)]发生率较C组降低($P<0.05$)。P组所有时点(T0~T5)MAP和HR差异无统计学意义($P>0.05$), 但C组、O组T4, T5时点MAP和HR较T0时点升高($P<0.05$); P组T4时点MAP[(91.6±4.2) mmHg]和HR[(60.8±3.4)/min]较O组[(103.3±6.8) mmHg, (72.4±4.9)/min]、C组[(121.6±7.4) mmHg, (88.9±6.4)/min]降低($P<0.05$); P组T5时点MAP[(91.3±4.7) mmHg]和HR[(61.5±3.2)/min]较O组[(101.4±3.8) mmHg, (72.6±4.3)/min]、C组[(120.7±6.1) mmHg, (89.3±4.2)/min]降低($P<0.05$)。结论: 间苯三酚复合羟考酮可优化依托咪酯用于老年患者宫腔镜检查的麻醉效果, 不但可以减少依托咪酯用量及不良反应的发生, 还可以使血流动力学更加平稳。

[关键词] 间苯三酚; 羟考酮; 依托咪酯; 宫腔镜; 老年

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Optimization for anesthetic effect on etomidate of phloroglucinol combined with oxycodone in elderly patients undergoing hysteroscopy

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Abstract **Objective:** To observe the optimization for anesthetic effect on etomidate of phloroglucinol combined with oxycodone in elderly patients undergoing hysteroscopy. **Methods:** From August 2018 to January 2019, 90 patients underwent hysteroscopy in the First Center Hospital of Baoding were included in this study. The patients with ASA II–III and aged 65–76 years, weighing 48–63 kg, were divided into three groups (30 cases in each group): phloroglucinol + oxycodone group (group P), oxycodone group (group O) and control group (group C). At 15 min before hysteroscopy, patients were intravenously injected with phloroglucinol (80 mg) in group P and 5% glucose solution (20 mL) in group O and group C. At 5 min before hysteroscopy, patients were intravenously injected with oxycodone (0.06 mg/kg) in group P and group O and 0.9% sodium chloride solution (5 mL) in and Group C. And then, all patients were intravenously injected with etomidate. When frown or body movement occurred during hysteroscopy, etomidate (0.1 mg/kg) was intravenously injected additionally. The MAP, HR and SpO₂ was recorded when patients entered the operating room, at 10 and 15 min after the injection of phloroglucinol or 5% glucose solution, at 2 min after induction and 1 and 5 min after hysteroscopy. The occurrence of frown or body movement and dosage of propofol, time of hysteroscopy and waking, the occurrence of respiratory depression, dizziness, nausea and vomiting and myoclonus were recorded. **Results:** The duration of hysteroscopy was significantly shorter in group P [(11.3±1.5) min] than that of group O [(15.1±2.6) min] and group C [(16.2±2.2) min] ($P<0.05$), and the waking time in group P was also shorter than that of group C [(4.3±1.1) vs (7.9±2.3) min, $P<0.05$]. The dosage of etomidate decreased significantly in group P [(11.2±1.7) mg] than that of group O [(16.4±2.3) mg] and group C [(28.6±2.1) mg] ($P<0.05$). The incidence of frown or body movement was lower in group P [2 (7%)] than that in group O [9 (30%)] and group C [17 (56%)] ($P<0.05$), and the incidence of nausea and vomiting [3 (10%) vs 12 (40%)] and myoclonus [1 (3%) vs 10 (33%)] was lower in group P than that of group C ($P<0.05$). There was no significant difference in MAP and HR at all time points in group P ($P>0.05$), however, MAP and HR at T4 and T5 in group C and group O was significantly higher than those at T0 ($P<0.05$). Compared with group O and group C, MAP and HR at T4 was significantly lower in group P [(91.6±4.2) vs (103.3±6.8) and (121.6±7.4) mmHg; (60.8±3.4) vs (72.4±4.9) and (88.9±6.4)/min, all $P<0.05$], and they were also significantly lower at T5 [(91.3±4.7) vs (101.4±3.8) mmHg and (120.7±6.1) mmHg; (61.5±3.2) vs (72.6±4.3) and (89.3±4.2)/min, all $P<0.05$]. **Conclusion:** Phloroglucinol combined with oxycodone can optimize the anesthetic effect for hysteroscopy in elderly patients. For it can not only reduce the dosage of etomidate and the occurrence of adverse reactions, but also make the hemodynamics more stable.

Keywords phloroglucinol; oxycodone; etomidate; hysteroscopy; elderly

宫腔镜检查是目前筛查与诊断子宫内膜病变的常用方法^[1]。检查过程中产生的伤害性刺激可导致老年患者发生心脑血管意外。异丙酚静脉麻醉是无痛宫腔镜检查的常用麻醉方法,但容易导致老年患者血流动力学不稳定^[2]。依托咪酯因其血流动力学稳定及对呼吸系统影响小等优势,更适合老年患者宫腔镜检查麻醉^[3]。《中国消化内镜诊疗镇静/麻醉的专家共识》^[4]指出:复合镇痛药物可降低依托咪酯镇痛不全的发生。羟考酮可激动 κ 受体,有效抑制内脏痛,缓解宫腔镜检查中伤害性刺激的程度^[5-8]。子宫有丰富的自主神经支配,子宫内膜受到刺激后可导致子宫过度收缩产生宫缩痛。目前的镇痛药物对宫缩痛的抑制效果并不理想。间苯三酚是一种亲肌性、非阿托品、非罂粟碱类平滑肌解痉药,可选择性作用于痉挛的平滑肌,快速解除子宫平滑肌痉挛,且不会引起心率增快及血压降低等抗胆碱样不良反应^[9-10]。故本研究拟评估间苯三酚复合羟考酮用于宫腔镜检查的麻醉效果,为优化宫腔镜检查的麻醉策略提供参考。

1 对象与方法

1.1 对象

选取2018年8月至2019年1月于保定市第一中心医院行无痛宫腔镜检查的患者90例,美国麻醉医师协会(ASA)II~III级,年龄65~76岁,体重48~63 kg。排除宫腔镜检查史、子宫手术史、宫腔内严重粘连者,对间苯三酚、羟考酮、丙泊酚过敏者,糖尿病患者,两周内应用镇痛类药物者及重要脏器功能不全者。采用随机数字表法将患者随机分为3组($n=30$):间苯三酚+羟考酮组(P组)、羟考酮组(O组)和对照组(C组)。不参与麻醉及评估的麻醉医师按照随机序列负责患者入组,并准备试验药物。不了解患者分组的麻醉医师负责麻醉实施、评估及数据收集。术者及患者同样不了解患者分组情况。研究通过医院伦理委员会审核(伦理批号:2017[014]),并获知情同意。

1.2 麻醉方法

所有麻醉实施均由同一麻醉医师完成。宫腔镜检查开始前15 min, P组缓慢静脉注射间苯三酚80 mg(用5%葡萄糖溶液稀释至20 mL)(南京恒生制药有限公司, H20175603); O组、C组缓慢静脉注射5%葡萄糖溶液20 mL。宫腔镜检查前5 min, P组、O组患者缓慢静脉注射羟考酮0.06 mg/kg(用0.9%氯化钠注射液稀释至5 mL)[(萌蒂(中国)制

药有限公司, BM239)], C组缓慢静脉注射0.9%氯化钠注射液5 mL。三组患者均缓慢静脉注射依托咪酯0.2 mg/kg(江苏恩华药业股份有限公司, 20180125),患者意识消失后开始行宫腔镜检查。

宫腔镜检查由同一妇科医生操作,以降低术者对该研究结果造成的影响。若检查过程中患者出现皱眉或体动时,静脉注射依托咪酯0.1 mg/kg。若检查过程中发生低氧血症($SPO_2 < 90\%$),则人工通气;若发生低血压($SBP < 80$ mmHg),则注射麻黄碱5 mg,如效果不佳,可给予去甲肾上腺素4 μ g;若发生心动过缓($HR < 50$ min^{-1}),则给予阿托品0.3 mg,如效果不佳,可给予异丙肾肾上腺素1~2 μ g。检查结束后,患者进入恢复室由麻醉护士管理。

1.3 观察指标

记录患者入室后(T_0),注射间苯三酚或5%葡萄糖溶液后10 min(T_1)、15 min(T_2),诱导后2 min(T_3)、进镜后1 min(T_4)及5 min(T_5)各时间点平均动脉压(MAP)、心率(HR)及脉搏氧饱和度(SPO_2)。记录检查过程中皱眉或体动例数及依托咪酯的用量;记录宫腔镜检查及苏醒时间;记录低氧血症、头晕、恶心呕吐、肌阵挛的发生情况。

1.4 统计学方法

统计学分析应用SPSS 17.0软件。计量资料以均数 \pm 标准差($\bar{x}\pm s$)表示,组间比较采用单因素方差分析,两两比较采用SNK检验。多时点观测资料采用重复测量方差分析+组间两两比较LSD- t 检验+组内比较配对 t 检验。计数资料以例(%)表示,组间比较采用 χ^2 检验。 $P < 0.05$ 认为差异有统计学意义。

2 结果

2.1 3组一般资料比较

患者年龄、ASA分级、身高及体重差异无统计学意义($P > 0.05$);与C组比较, P组宫腔镜检查时间缩短($P < 0.05$),与O组比较, P组宫腔镜检查时间缩短($P < 0.05$); O组、C组宫腔镜检查时间差异无统计学意义($P > 0.05$, 表1)。

2.2 3组各时点MAP和HR的比较

组间差异、时间差异均有统计学意义。 T_0 , T_1 , T_2 , T_3 时点三组MAP和HR比较均无统计学意义($P > 0.05$); C组、O组 T_4 , T_5 时点MAP和HR较 T_0 时点升高($P < 0.05$), P组 T_4 , T_5 时点MAP和HR与 T_0 时点比较差异无统计学意义($P > 0.05$);与

C组比较, T_4 , T_5 时点P组、O组MAP和HR降低($P<0.05$); 与O组比较, T_4 , T_5 时点P组MAP和HR降低($P<0.05$, 表2)。

2.3 3组麻醉效果比较

与C组比较, P组、O组皱眉或体动发生率、苏醒时间及依托咪酯用量均降低($P<0.05$); 与O组

比较, P组皱眉或体动的发生率及依托咪酯用量减少($P<0.05$, 表3)。

2.4 3组不良反应比较

与C组比较, P组、O组恶心呕吐及肌阵挛的发生率降低($P<0.05$); 3组患者低氧血症及头晕的发生率差异无统计学意义($P>0.05$, 表4)。

表1 3组一般资料比较($n=30$)

Table 1 Comparison of demographics in 3 groups ($n=30$)

一般资料	P组	O组	C组	F/χ^2	P
年龄/岁	70.2 ± 5.1	71.4 ± 6.5	70.9 ± 4.8	0.232	0.793
ASA (II/III)/例	19/11	21/9	20/10	0.300	0.861
身高/cm	155.3 ± 2.8	156.9 ± 4.7	154.6 ± 3.8	1.071	0.347
体重/kg	52.7 ± 3.3	50.4 ± 2.6	51.6 ± 4.5	0.716	0.491
检查时间/min	11.3 ± 1.5 ^{ab}	15.1 ± 2.6	16.2 ± 2.2	42.545	<0.001

与C组比较, ^a $P<0.05$; 与O组比较, ^b $P<0.05$ 。

^a $P<0.05$ vs group C; ^b $P<0.05$ vs group O.

表2 3组各时点MAP和HR的比较($n=30$)

Table 2 Comparison of MAP and HR at different time points in 3 groups ($n=30$)

生命体征	时点	P组	O组	C组
MAP/mmHg	T_0	89.6 ± 3.9	90.3 ± 4.6	91.5 ± 6.3
	T_1	90.2 ± 4.7	90.6 ± 3.9	90.8 ± 4.2
	T_2	90.1 ± 4.5	89.4 ± 6.6	91.2 ± 3.6
	T_3	88.4 ± 5.3	90.7 ± 4.8	90.1 ± 5.8
	T_4	91.6 ± 4.2 ^{ab}	103.3 ± 6.8 ^{at}	121.6 ± 7.4 ^t
	T_5	91.3 ± 4.7 ^{ab}	101.4 ± 3.8 ^{at}	120.7 ± 6.1 ^t
HR/ min^{-1}	T_0	62.3 ± 4.6	61.4 ± 4.2	61.6 ± 7.3
	T_1	63.1 ± 3.3	62.7 ± 4.6	60.9 ± 6.8
	T_2	62.6 ± 2.9	60.9 ± 5.1	61.2 ± 5.6
	T_3	61.6 ± 4.4	60.1 ± 4.7	60.4 ± 3.8
	T_4	60.8 ± 3.4 ^{ab}	72.4 ± 4.9 ^{at}	88.9 ± 6.4 ^t
	T_5	61.5 ± 3.2 ^{ab}	72.6 ± 4.3 ^{at}	89.3 ± 4.2 ^t

与 T_0 时点比较, ^b $P<0.05$; 与C组比较, ^a $P<0.05$; 与O组相比, ^t $P<0.05$ 。

^b $P<0.05$ vs T_0 ; ^a $P<0.05$ vs group C; ^t $P<0.05$ vs group O. 1 mmHg=0.133 kPa.

表3 3组麻醉效果比较($n=30$)Table 3 Comparison of effect of anaesthesia in 3 groups ($n=30$)

麻醉效果指标	P组	O组	C组	$F(\chi^2)$	P
皱眉或体动/[例(%)]	2 (7) ^{ab}	9 (30) ^a	17 (56)	17.523	<0.001
苏醒时间/min	4.3 ± 1.1 ^a	5.1 ± 1.6 ^a	7.9 ± 2.3	35.170	<0.001
依托咪酯用量/mg	11.2 ± 1.7 ^{ab}	16.4 ± 2.3 ^a	28.6 ± 2.1	584.202	<0.001

与C组比较, ^a $P<0.05$; 与O组比较, ^b $P<0.05$ 。

^a $P<0.05$ vs group C; ^b $P<0.05$ vs group O.

表4 3组不良反应比较($n=30$)Table 4 Comparison of occurrence of adverse reactions in 3 groups ($n=30$)

不良反应	P组	O组	C组	χ^2	P
低氧血症/[例(%)]	2 (7)	3 (10)	3 (10)	0.274	0.872
头晕/[例(%)]	2 (7)	2 (7)	3 (10)	0.310	0.856
恶心呕吐/[例(%)]	3 (10) ^a	2 (7) ^a	12 (40)	13.199	0.001
肌阵挛/[例(%)]	1 (3) ^a	3 (10) ^a	10 (33)	11.335	0.003

与C组比较, ^a $P<0.05$ 。

^a $P<0.05$ vs group C.

3 讨论

宫腔镜检查合理的麻醉方案既要有效抑制操作引起的伤害性刺激, 还要解除应激造成的子宫平滑肌痉挛。静脉麻醉常用于宫腔镜检查, 通常联合阿片类药物如纳布啡、羟考酮、地佐辛、舒芬太尼等^[11-13]。羟考酮可同时激动 μ 和 κ 双阿片受体, 对内脏痛镇痛效果优于其他阿片类药物, 且治疗剂量很少抑制呼吸, 因此更适合于老年患者无痛宫腔镜检查^[5-6]。间苯三酚可选择性作用于痉挛的平滑肌, 解痉的同时不具有抗胆碱样不良反应, 对心血管系统无影响, 可安全用于老年患者解痉治疗^[9,14]。故本研究选择间苯三酚与羟考酮作为研究药物。间苯三酚起效快, 静脉给药后15 min达到血药浓度高峰, 故选择宫腔镜检查前15 min作为用药时间^[15]。

杨娉等^[16]比较了间苯三酚、哌替啶及安定在中晚期产程中的应用, 结果发现间苯三酚可显著缓解分娩痛, 并可有效改善宫颈条件。杨振华等^[17]将间苯三酚用于中期妊娠引产, 发现间苯三酚可改善宫颈条件, 缓解患者痛苦, 缩短引产时间。傅文君等^[18]探讨了笑气联合间苯三酚用于无痛人流术的镇痛效果, 镇痛效果及宫颈软化程度

明显优于仅应用笑气组。以上研究均证实了间苯三酚在妇产科领域应用的安全性及有效性。本研究表明: P组体动发生率、依托咪酯用量低于O组, 且P组生命体征较O组平稳, 这表明间苯三酚复合羟考酮用于老年患者宫腔镜检查的麻醉效果确切。分析原因可能是, 牵拉或扩张宫颈、膨宫及宫内操作除可引起内脏痛外, 还可刺激子宫内自主神经导致宫缩痛的发生, 间苯三酚可选择性的作用于痉挛的子宫平滑肌, 快速解除平滑肌痉挛, 从而有效抑制宫缩痛的发生。然而, 间苯三酚解痉的作用机制目前尚不明确。袁海鹏^[19]发现间苯三酚可通过阻断平滑肌细胞膜上的电压依赖式钙离子通道发挥解痉作用, 并且与胆碱能神经无关。王琪^[20]证实间苯三酚的解痉镇痛作用可能与体内代谢过程相关, 而非直接针对某一确定的受体或靶点, 而是间接发挥作用。而更多研究^[21]认为间苯三酚通过抑制儿茶酚胺-O-甲基转移酶发挥解痉作用。本研究还发现, 间苯三酚组宫腔镜检查时间较羟考酮组及对照组明显缩短。分析原因可能是: 老年患者激素水平改变, 宫颈条件差, 间苯三酚预处理可以改善宫颈条件, 增强患者对宫腔镜检查的耐受性, 从而缩短检查时间^[22]。本研究中静脉给予间苯三酚后患者

血压、心率及脉搏氧饱和度基本无变化,这体现了间苯三酚的非阿托品样特性,在解痉的同时,不会引起心率增快、血压降低等抗胆碱样不良反应发生^[23]。该结果提示间苯三酚在老年患者应用中的安全性。

恶心呕吐、肌阵挛是依托咪酯的常见不良反应。研究结果显示对照组较间苯三酚组及羟考酮组恶心呕吐、肌阵挛发生率高。分析原因可能是:1)预给予阿片类药物可减少依托咪酯恶心呕吐、肌阵挛等不良反应的发生^[4,24-25];2)恶心呕吐及肌阵挛等不良反应与依托咪酯的用量呈正相关。因此,在保证镇静的同时,减少依托咪酯用量,以避免不良发应的发生。

此外,本研究尚有一定的局限性。1)间苯三酚为选择性的平滑肌解痉药物,对于缓解宫缩痛效果理想。由于随访时间的限制,本研究未对宫腔镜检查术后的宫缩痛进行观察,这将在后续研究中予以探讨;2)间苯三酚在解除子宫平滑肌痉挛抑制宫缩痛的同时,可能会增加术后出血的风险。因此,对于在宫腔镜手术中应用的安全性有待进一步研究。

综上所述,间苯三酚联合羟考酮可优化老年患者宫腔镜检查的麻醉效果,不但可以减少依托咪酯用量及不良反应的发生,还可以使血流动力学更加平稳。

参考文献

- 何香梅, 马西文, 秦凤雪, 等. 宫腔镜在中老年子宫内良恶性肿瘤诊断中的应用价值[J]. 解放军医学院学报, 2017, 38(12): 1127-1129.
HE Xiangmei, MA Xiwen, QIN Fengxue, et al. Value of hysteroscopy in differentiating benign and malignant endometrial lesions in middle-aged and elderly patients[J]. Academic Journal of Chinese PLA Medical School, 2017, 38(12): 1127-1129.
- 彭志宏, 邹磊, 李灵芝, 等. 不同配伍的丙泊酚静脉麻醉在人工流产及宫腔镜检查中的应用[J]. 解放军医学院学报, 2004, 6: 442-443.
PENG Zhihong, ZOU Lei, LI Lingzhi, et al. The apply of different compatibility of propofol used for intravenous anesthesia in induced abortion and uteroscope examine[J]. Academic Journal of Chinese PLA Medical School, 2004, 6: 442-443.
- 邹群飞, 梁红玲, 朱坤仪. 两种静脉麻醉方法用于宫腔镜检查术的探讨[J]. 中国妇幼保健, 2013, 28(8): 1357-1359.
ZOU Qunfei, LIANG Honglin, ZHU Kunyi. Two methods of intravenous anesthesia for hysteroscopy[J]. Maternal and Child Health Care of China, 2013, 28(8): 1357-1359.
- 中华医学会麻醉学分会, 中华医学会消化内镜学分会. 中国消化内镜诊疗镇静/麻醉的专家共识[J]. 临床麻醉学杂志, 2014, 30(9): 920-927.
Chinese society of Anesthesiology, Chinese society of digestive endoscopy. Expert consensus on digestive and endoscopic diagnosis and treatment of sedation/anaesthesia in China[J]. Journal of Clinical Anesthesiology, 2014, 30(9): 920-927.
- Kim MK, Ahn SE, Shin E, et al. Comparison of analgesic efficacy of oxycodone and fentanyl after total hip replacement surgery: a randomized controlled trial[J]. Medicine (Baltimore), 2018, 97(49): e13385.
- 徐建国. 盐酸羟考酮的药理学和临床应用[J]. 临床麻醉学杂志, 2014, 30(5): 511-513.
XU Jianguo. Pharmacology and clinical application of oxycodone hydrochloride[J]. Journal of Clinical Anesthesiology, 2014, 30(5): 511-513.
- 熊俊成, 朱程芬, 李剑, 等. 羟考酮在门诊宫腔镜术中的应用[J]. 临床麻醉学杂志, 2015, 31(6): 607-608.
XIONG Juncheng, ZHU Chengfen, LI Jian, et al. Application of oxycodone for clinical hysteroscopy[J]. Journal of Clinical Anesthesiology, 2015, 31(6): 607-608.
- 丑靖, 颜萍萍, 杨沁婧, 等. 羟考酮用于宫腔镜手术镇痛的临床观察[J]. 临床麻醉学杂志, 2017, 33(8): 810-811.
CHOU Jing, YAN Pingping, YANG Qinjing, et al. Clinical observation on analgesia effect of oxycodone for hysteroscopic surgery[J]. Journal of Clinical Anesthesiology, 2017, 33(8): 810-811.
- Ai L, Lan X, Wang L, et al. Clinical study on the influence of phloroglucinol on plasma angiotensin II and D-Dimer index in patients with severe pregnancy-induced hypertension[J]. Pak J Pharm Sci, 2016, 29(4): 1375-1378.
- Tchente CN, Nana TN, Tolefac PN, et al. Effect of phloroglucinol on the active phase of labour (EPAL trial): a single blinded randomised controlled trail in a tertiary hospital in sub-Saharan Africa[J]. Pan Afr Med J, 2018, 30(17): 11203.
- 毕小宝, 王琼, 张高龙, 等. 纳布啡与舒芬太尼用于宫腔镜手术的麻醉效果比较[J]. 实用医学杂志, 2018, 34(18): 3085-3088.
BI Xiaobao, WANG Qiong, ZHANG Gaolong, et al. Effects of nalbuphine and sufentanil for hysteroscopy: a comparative study[J]. The Journal of Practical Medicine, 2018, 34(18): 3085-3088.
- 修欢欢, 张涛, 李颖源, 等. 地佐辛联合地塞米松预先给药对宫腔镜手术患者苏醒质量及术后镇痛效果的影响[J]. 广东医学, 2018, 39(1): 13-16.
XIU Huanhuan, ZHANG Tao, LI Yinyuan, et al. Effect of pretreatment of Dezocine combined with dexamethasone on analgesia and recovery

- quality for hysteroscopy[J]. *Guangdong Medical Journal*, 2018, 39(1): 13-16.
13. 田虹, 王凤, 刘爽, 等. 羟考酮复合丙泊酚预防宫腔镜手术中寒战及宫缩痛效果研究[J]. *中国实用妇科与产科杂志*, 2018, 34(3): 315-319.
TIAN Hong, WANG Feng, LIU Shuang, et al. Oxycodone compound propofol in hysteroscopic surgery and its preventive efficacy on chills and uterine contraction pain[J]. *Chinese Journal of Practical Gynecology and Obstetrics*, 2018, 34(3): 315-319.
14. 孙宁霞, 金志军, 李文. 间苯三酚可缓解老年患者宫腔镜检查术中疼痛[J]. *第二军医大学学报*, 2012, 33(6): 681-682.
SUN Ningxia, JIN Zhijun, LI Wen. Effect of phloroglucinol on pain in aged patients undergoing hysteroscopy[J]. *Academic Journal of Second Military Medical University*, 2012, 33(6): 681-682.
15. Hurault-Delarue C, Lacroix I, Vidal S, et al. Drugs in pregnancy: study in the EFEMERIS database (2004 to 2008)[J]. *Gynecol Obstet Fertil*, 2011, 39(10): 554-558.
16. 杨娉, 覃林芳, 杨釉勤. 产程中应用间苯三酚、安定、杜冷丁改善分娩的效果比较[J]. *医学临床研究*, 2010, 27(11): 2092-2094.
YANG Pin, QIN Linfang, YANG Youqin. Comparison of the effects of phloroglucinol, diazepam or pethidine during delivery[J]. *Journal of Clinical Research*, 2010, 27(11): 2092-2094.
17. 杨振华, 陈晓, 段立杰, 等. 间苯三酚在中期妊娠引产中的应用[J]. *武警医学院学报*, 2008, 17(7): 558-560.
YANG Zhenhua, CHEN Xiao, DUAN Lijie, et al. Application of spasfon in course of terminating midtrimester pregnancy[J]. *Acta Academiae Medicinae CPAE*, 2008, 17(7): 558-560.
18. 傅文君, 楼红英. 笑气联合斯帕丰用于门诊无痛人流术中的临床研究[J]. *中国现代应用药学*, 2005, 22(4): 339-340.
FU Wenjun, LOU Hongying. Clinic study of combination of spasfon and laughing gas in painless artificial abortion of outpatients[J]. *The Chinese Journal of Modern Applied Pharmacy*, 2005, 22(4): 339-340.
19. 袁海鹏. 间苯三酚解除结肠平滑肌痉挛作用机制研究[D]. 山东大学, 2005.
YUAN Haipeng. A study on the mechanism of action of phloroglucinol[D]. Shandong University, 2005.
20. 王琪. 卡前列素氨丁三醇诱导小鼠离体痛经模型的建立与间苯三酚解痉机制的研究[D]. 湖南中医药大学, 2013.
WANG Qi. Carboprost induced invitro dysmenorrhea model in mouse and the mechanism of phloroglucinol's antispasmodic effect[D]. Hunan University of Chinese Medicine, 2013.
21. 王兰, 刘伟, 张于, 等. 间苯三酚对羟考酮复合丙泊酚用于宫腔镜检查麻醉效果的影响[J]. *临床与病理杂志*, 2019, 39(10): 2166-2171.
WANG Lan, LIU Wei, ZHANG Yu, et al. Effect of phloroglucinol on anesthesia of oxycodone combined with propofol for hysteroscopy[J]. *Journal of Clinical and Pathological Research*, 2019, 39(10): 2166-2171.
22. 付凤仙, 段华, 汪沙, 等. 间苯三酚在绝经期患者宫腔镜手术中的应用[J]. *中国微创外科杂志*, 2019, 2: 137-140.
FU Fengxian, DUAN Hua, WANG Sha, et al. Application of phloroglucinol for hysteroscopy in menopausal patients[J]. *Chinese Journal of Minimally Invasive Surgery*, 2019, 2: 137-140.
23. Erb H. A comparison of the analgesic effects of pentazocine and pethidine in post-operative pain[J]. *Gynaecologia*, 1966, 162(4): 275-282.
24. 汪伟, 吕洁, 钱燕宁, 等. 羟考酮或芬太尼预给药对依托咪酯所致肌阵挛的影响[J]. *临床麻醉学杂志*, 2015, 31(7): 707-708.
WANG Wei, LÜ Jie, QIAN Yanning, et al. Pretreative effect of oxycodone or fentanyl for myoclonus induced by etomidate[J]. *Journal of Clinical Anesthesiology*, 2015, 31(7): 707-708.
25. 徐鹏, 蔡雪峰, 陈星, 等. 预注布托啡诺对无痛胃镜依托咪酯肌阵挛的影响[J]. *临床麻醉学杂志*, 2013, 29(5): 510-511.
XU Peng, CAI Xuefeng, CHEN Xing, et al. Effect of butorphanol on myoclonus induced by etomidate in painless gastroscopy[J]. *Journal of Clinical Anesthesiology*, 2013, 29(5): 510-511.

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