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不同可行式分娩镇痛方法对分娩结局及胎儿血氧饱和度的影响 *

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摘要 目的:探讨不同可行式分娩镇痛方法对产妇分娩结局及胎儿血氧饱和度(FSaO₂)的影响。**方法:**选取 2017 年 1 月至 2018 年 2 月期间于成都市第二人民医院妇产科住院分娩的 123 例初孕产妇作为研究对象,分为罗哌卡因结合氢吗啡酮可行式分娩镇痛组(A 组)45 例、罗哌卡因结合舒芬太尼可行式分娩镇痛组(B 组)45 例以及常规分娩组(C 组)33 例。比较三组产妇的剖宫产率、产后出血量、胎儿 FSaO₂,并对比三组胎儿窒息程度。**结果:**三组产妇年龄、孕周、胎儿体重、剖宫产率以及产后 2 h、24 h 出血量比较无统计学差异($P>0.05$),A 组胎儿轻度窒息率高于 B、C 组,A 组胎儿正常率低于 B、C 组($P<0.05$),B、C 组胎儿的轻度窒息率、正常率比较无统计学差异($P>0.05$),A 组的第一产程、第二产程胎儿 FSaO₂ 低于 B、C 组($P<0.05$),B、C 两组第一产程、第二产程胎儿 FSaO₂ 比较无统计学差异($P>0.05$)。**结论:**罗哌卡因结合舒芬太尼的可行式分娩镇痛与常规分娩均不影响产妇的分娩结局和胎儿 FSaO₂,相较罗哌卡因结合氢吗啡酮在分娩镇痛中具有可行性及安全性。

关键词:分娩镇痛;可行式;分娩结局;血氧饱和度;罗哌卡因;氢吗啡酮;舒芬太尼

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Effect of Different Methods of Ambulatory Labor Analgesia on Delivery Outcome and Fetal Oxygen Saturation*

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ABSTRACT Objective: To explore the effects of different methods of ambulatory labor analgesia on delivery outcomes and fetal oxygen saturation (FSaO₂). **Methods:** 123 cases of primiparas pregnant women who were hospitalized for delivery in obstetrics and gynecology department in second people's hospital of chengdu from January 2017 to February 2018 were selected as research objects. They were divided into ropivacaine combined with hydrogen morphine ambulatory labor analgesia group (group A) with 45 cases, ropivacaine combined with sufentanil ambulatory labor analgesia group (group B) with 45 cases and conventional delivery group (group C) with 33 cases. The cesarean section rate, postpartum hemorrhage, FSaO₂ were compared between the three groups, and the degree of asphyxia in the three groups were compared. **Results:** There was no significant difference between the three groups in maternal age, gestational age, fetal weight, cesarean section rate and the amount of postpartum bleeding within 2 h and 24 h ($P>0.05$). The fetal mild asphyxia rate of group A was higher than that of group B and group C, while the normal rate of fetus of group A were lower than that of those two groups ($P<0.05$). There was no difference in fetal mild asphyxia rate and the normal rate of fetus of groups B and group C ($P>0.05$). The FSaO₂ in the first and second labor stage of group A were lower than those of group B and group C ($P<0.05$). There was no difference of the fetal FSaO₂ in the first and second labor stage between group B and group C ($P>0.05$). **Conclusion:** Conventional delivery and ropivacaine combined with sufentanil ambulatory labor analgesia has no effect on delivery outcomes and FSaO₂. It is feasible and safe compared ropivacaine combined with hydrogen morphine ambulatory labor analgesia.

Key words: Labor analgesia; Ambulatory; Delivery outcome; Fetal oxygen saturation; Ropivacaine; Hydrogen morphine; Sufentanil

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前言

分娩是妇女孕育后代的重要生理过程,分娩过程中妇女需忍受剧烈疼痛,持续性的剧痛会使产妇产生紧张、焦虑情绪,还

会增加产妇体内儿茶酚胺的释放,导致产妇的血压升高、心率加快,致使子宫胎盘内的血流量减少,引起胎儿缺氧,从而危及母婴的生命^[1-3]。随着临床中人性化服务推广,分娩镇痛逐步应用于孕妇分娩的过程中,目前分娩镇痛主要采用药物性镇痛^[4,5]。

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可行走式分娩镇痛是指产妇在产程中使用镇痛药物之后可下床活动,其与普通的镇痛相比可降低子宫的收缩频率,缩短第一产程,有助于减轻产时疼痛^[6]。罗哌卡因是一种长效局麻药,临床中可用于硬膜外阻滞分娩镇痛,舒芬太尼与氢吗啡酮均作用于 μ 阿片受体的镇痛药,常用于辅助麻醉和麻醉诱导^[9-11]。本研究分别行罗哌卡因结合舒芬太尼、罗哌卡因结合氢吗啡酮的可行走式分娩镇痛和常规分娩,观察三组产妇的分娩结局及胎儿血氧饱和度(fetal oxygen saturation, F_{SaO₂}),并对可行走式分娩镇痛的可行性和安全性进行评价,为可行走式分娩镇痛的临床应用提供一定的理论依据。

1 资料与方法

1.1 基本资料

选取2017年1月至2018年2月期间于成都市第二人民医院妇产科住院分娩的123例初产孕妇作为研究对象,纳入标准^[12]:①孕妇为头位单胎;②足月妊娠,孕周在37-41周内;③孕妇骨盆外测量正常。排除标准:①合并糖尿病、抑郁症、高血压等妊娠合并症的孕妇;②产前电子胎心监测提示为巨大儿、胎儿宫内生长受限的孕妇;③产前B超提示脐带绕颈两周以上及羊水过少的孕妇;④对麻醉药品存在过敏禁忌证者;⑤急诊分娩产妇。本研究内容均事先告知产妇及其家属,并根据产妇自愿原则以及有无镇痛需求将其分为镇痛分娩组90例和非镇痛常规分娩组(C组)33例,镇痛分娩组采用随机数字表法分为罗哌卡因+氢吗啡酮可行走式分娩镇痛组(A组)和罗哌卡因+舒芬太尼可行走式分娩镇痛组(B组)各45例。

1.2 方法

C组产妇不实行分娩镇痛,行常规分娩。待A、B组产妇宫口开至2-3 cm时施行硬膜外分娩镇痛,采用L2-L3穿刺硬膜外置管,管外连接微量电子镇痛泵,A组为0.1%罗哌卡因(上

海禾丰制药有限公司,国药准字:H20163174)+氢吗啡酮(宜昌人福药业有限责任公司,国药准字:H20120113)8 μ g/mL,6 mL/h,100 mL泵,自控0.5 mL/次,锁定15 min;B组为0.1%罗哌卡因+舒芬太尼(宜昌人福药业有限责任公司,国药准字:H20050580)0.5 μ g/mL,6 mL/h,100 mL泵,自控0.5 mL/次,锁定15 min。产妇在镇痛过程中可在护士的陪伴下正常下地行走,同时严密监护产妇的宫缩状态、胎心、不良反应及生命体征,待产妇宫口全开时停用麻醉剂。

1.3 评价指标

严密监测产妇的第一产程(有规则的宫缩开始到宫口开全约为10 cm)、第二产程(即胎儿娩出期,指从子宫口开全到胎儿娩出)的产程时限。在产妇宫缩间歇期,将血氧饱和度探测仪器(PeneView T1, Windray公司)的DS-100A探头沿宫颈内口缓慢放入宫腔内贴近胎儿面颊部位,对胎儿F_{SaO₂}进行连续监测,如没有测得稳定的胎儿F_{SaO₂}则需要调整探头位置。比较各组产妇的剖宫产率、产后2 h、24 h的出血量,并评价胎儿窒息情况,评价方法采用Apgar法^[13], ≥ 8 分为正常,4-8分为轻度窒息,<4分为重度窒息。

1.4 统计学方法

采用SPSS 21.0软件进行统计学分析,计量资料采用均数 $\pm$ 标准差($\bar{x} \pm s$)形式表示,两组间比较行独立样本t检验,多组间分析行单因素方差分析;计数资料以n(%)形式表示,行卡方检验。以P<0.05表示差异具有统计学意义。

2 结果

2.1 三组基本资料比较

三组产妇年龄、孕周及胎儿体重比较差异无统计学意义(P>0.05),见表1。

表1 三组产妇基本资料比较($\bar{x} \pm s$)

Table 1 Comparison of basic data in three groups of parturients($\bar{x} \pm s$)

Groups	n	Age(years old)	Gestational week (weeks)	Fetal weight (kg)
Group A	45	29.31 $\pm$ 4.01	39.22 $\pm$ 1.04	3.84 $\pm$ 0.27
Group B	45	28.66 $\pm$ 3.94	38.96 $\pm$ 0.97	4.02 $\pm$ 1.06
Group C	33	29.70 $\pm$ 5.19	39.71 $\pm$ 1.35	3.43 $\pm$ 0.56
F	-	3.267	1.366	0.520
P	-	0.057	0.276	0.602

2.2 三组分娩结局对比

无统计学意义(P>0.05),见表2。

三组产妇剖宫产率以及产后2 h及24 h出血量比较差异

表2 三组产妇分娩结局比较

Table 2 Comparison of delivery outcomes in three groups of parturients

Groups	n	Cesarean section[n(%)]	Amount of postpartum bleeding within 2 h(mL)	Amount of postpartum bleeding within 24 h(mL)
Group A	33	6(18.2)	244.6 $\pm$ 104.6	343.7 $\pm$ 112.5
Group B	45	8(17.8)	255.9 $\pm$ 114.0	357.0 $\pm$ 109.8
Group C	45	9(20.0)	257.3 $\pm$ 120.7	361.8 $\pm$ 117.8
χ^2/F	-	0.099	1.243	2.710
P	-	0.952	0.306	0.197

2.3 三组胎儿窒息程度比较

三组胎儿重度窒息率整体比较无统计学差异($P>0.05$),正常以及轻度窒息率整体比较有统计学差异($P<0.05$)。A 组胎儿

轻度窒息率高于 B、C 组,A 组胎儿正常率低于 B、C 组($P<0.05$),B、C 组的轻度窒息率、正常率比较差异无统计学意义($P>0.05$),见表 3。

表 3 三组胎儿窒息程度比较[n(%)]

Table 3 Comparison of the degree of fetal asphyxia in three groups of parturients[n(%)]

Groups	n	Severe asphyxia	Mild asphyxia	Normal
Group A	45	4(8.9)	14(31.1)*#	27(60.0)*#
Group B	45	3(6.7)	6(13.3)	36(80.0)
Group C	33	2(6.1)	2(6.1)	29(87.9)
χ^2	-	0.269	9.136	8.869
P	-	0.874	0.010	0.012

Note: Compared with Group B, * $P<0.05$; Compared with Group C, # $P<0.05$.

2.4 三组不同产程期胎儿 FSaO₂ 比较

三组第一产程和第二产程的胎儿 FSaO₂ 整体比较有统计学差异($P<0.05$),其中 A 组的第一产程、第二产程胎儿 FSaO₂

低于 B、C 两组 ($P<0.05$),B、C 两组第一产程、第二产程胎儿 FSaO₂ 比较无统计学差异($P>0.05$),见表 4。

表 4 三组不同产程期胎儿 FSaO₂ 比较($\bar{x} \pm s, \%$)

Table 4 Comparison of fetal FSaO₂ in three groups at different stages of labor($\bar{x} \pm s, \%$)

Groups	n	Firs stage of labor	Second stage of labor
Group A	45	49.3 $\pm$ 4.9*#	40.5 $\pm$ 5.0*#
Group B	45	53.6 $\pm$ 6.0	44.7 $\pm$ 3.8
Group C	33	54.3 $\pm$ 5.4	46.9 $\pm$ 4.7
F	-	15.966	12.743
P	-	0.000	0.000

Note: Compared with Group B, * $P<0.05$; Compared with Group C, # $P<0.05$.

3 讨论

随着人性化医疗水平的发展,可行走式分娩镇痛的研究不仅要考虑产妇在分娩过程中的宫缩程度、出血量及剖宫产率,还要重点关注胎儿的窒息程度及其 FSaO₂^[14-16]。良好的分娩镇痛要有合理的麻醉药品种类、使用浓度,在保证镇痛效果良好的基础上,要保证产妇与胎儿的生命安全,不影响正常分娩,研究显示,0.1%的盐酸罗哌卡因为应用于临床分娩镇痛的最佳浓度^[17,18]。舒芬太尼在芬太尼类药物镇痛作用最强,其通过鞘内注射的镇痛强度为芬太尼的 4-5 倍,常与罗哌卡因进行联合麻醉镇痛,用于分娩镇痛^[19,20]。氢吗啡酮是一种强效阿片类镇痛药,其与舒芬太尼均为 μ 阿片受体激动剂,鞘内注射氢吗啡酮的起始时间较短,且镇痛时间较舒芬太尼长,麻醉不良反应也较少^[21,22]。分娩过程的可行走相较于常规分娩可以增加胎儿对宫颈的压力,增强产妇的宫缩,从而加快产程,同时在行走过程中关节的轻微运动可以促使胎儿在产道中的分娩转动,降低胎位异常的发生率^[23,24]。本研究对有镇痛需求的产妇施行可行走式分娩镇痛,比较可行走式镇痛与常规分娩产妇分娩结局及胎儿 FSaO₂,并比较两种镇痛方式的安全性和可行性。

本研究结果显示,三组产妇剖宫产率以及产后 2 h、24 h 出血量比较无统计学差异($P>0.05$),A 组胎儿正常率以及第一产程、第二产程胎儿 FSaO₂ 低于 B、C 组($P<0.05$),B、C 组胎儿的正常率、第一产程、第二产程胎儿 FSaO₂ 比较无统计学差异

($P>0.05$),说明两种可行走式分娩镇痛相较常规分娩对产妇剖宫产率、产后出血量无影响,罗哌卡因结合氢吗啡酮的可行走式分娩镇痛相较常规分娩,胎儿轻度窒息例数增加,第一产程和第二产程胎儿 FSaO₂ 降低,而罗哌卡因结合舒芬太尼的可行走式分娩镇痛则对胎儿窒息程度、第一产程和第二产程胎儿 FSaO₂ 无影响。分析原因可能为氢吗啡酮作用于阿片 μ 受体的时间长于舒芬太尼,影响产妇的宫缩间隔时间,对产程过程的 FSaO₂ 有一定的影响,随着产程进展,胎儿的 FSaO₂ 呈现下降趋势^[25]。杨家道等^[26]人通过比较舒芬太尼与芬太尼结合罗哌卡因的分娩镇痛效果得到,舒芬太尼结合罗哌卡因在良好的镇痛基础上,不影响产妇产程,对母婴无不良反应。舒芬太尼在芬太尼类药物镇痛效果最好,其与罗哌卡因结合常用于分娩镇痛,与常规分娩相比,可行走式分娩镇痛可增加胎儿对宫颈的压力和加强产妇宫缩,导致产程加快,并且产妇在行走过程中可促使产道中的胎儿转动,减少胎位异常出现^[27-29]。氢吗啡酮结合罗哌卡因常用于剖宫术后的镇痛,镇痛效果显著^[30],但对分娩过程中的产程及婴儿窒息率研究报道较少,通过本研究可以得到该镇痛方案对于产妇剖宫产率、出血量等没有影响,对胎儿窒息率有轻度影响,但安全性效果要低于舒芬太尼联合罗哌卡因的镇痛方案。说明舒芬太尼联合罗哌卡因的分娩镇痛方案用于分娩镇痛要优于罗哌卡因结合氢吗啡酮的镇痛方案,可为临床中分娩镇痛的药物应用提供一定参考。

综上所述,可行走式分娩镇痛不影响产妇的剖宫产率、产

后出血量,罗哌卡因结合舒芬太尼相较罗哌卡因结合氢吗啡酮在分娩镇痛更具有可行性及安全性。

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