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Opioid free obstetric epidural: an effective alternative allowing walking during labor

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Position du problème et objectif(s) de l'étude:

To optimize the vaginal delivery experience, the concept of "walking epidural" was invented since the 1990s. But epidural analgesia(EPA) usually involves an opioid adjuvant which may interfere with walking possibility due to its side effects.

We mainly aimed to compare the possibility of walking during labor between two groups divided according the used epidural drugs: "RS" group=ropivacaine(R)+sufentanil(S) "RC" group=R+clonidine(C). We also compared analgesia quality and patient satisfaction.

Matériel et méthodes:

With the agreement of Ethics comitee and written patients consent, we conducted a prospective randomized double-blind study*Inclusion criteria: ASA II, cervical dilatation: 2-3 cm*Exclusion criteria: extension of EPA for a cesarean section, impossibility of walking during labor.*EPA protocol: 1/analgesic solution (AS) preparation: RS group**Bolus Syringe(BS): 10mgR+10ug S/**first maintenance syringe(FMS): 50mgR+10ugS, RC group**BS: 10mgR+25ugC/**FMS: 50mgR+25ugC 2/AS administration: After catheter placement, injection of the BS of corresponding AS followed by iterative boluses of 2 ml from the FMS every 15 min. An additional bolus of 2 ml was administered if the Visual Analogic Scale(VAS) ≥ 3 and the next bolus follows the 15 min interval rule. If the FMS ends before delivery, further maintenance syringe was used containing only 50mg R for both groups. A 3 meters with help walking was realized every 15 min if possible. Statistics were performed by IBM SPSS Statistics 25: $p < 0.005$ = significance threshold.

Résultats & Discussion:

50 patients were enrolled: 24 in group RS and 26 in group RC. They were epidemiologically comparable. Tables 1 and 2 present the hemodynamic parameters progress. There was no significant difference between the 2 groups in: the number of realized walking in all evaluated timings ($p > 0.05$), the mean VAS levels in all evaluated timings ($p > 0.05$), the total median consumed dose of R (group RS: 23 mg [20,5-29], group RC: 28mg [18,2-36,5], $p = 0,058$), the occurrence of instrumental delivery ($p = 0.09$) and the overall satisfaction ($p = 0.27$). The mean delay of analgesia onset was significantly shorter in group RS (18,74 min \pm 9,995 versus 25,58 \pm 11,075 in group RC; $p = 0,028$). The median duration of the second phase was significantly shorter in group RS (90min [45-150] versus 150 min [60-210] in group RC, $p = 0.025$). The desire of repeating EPA in further vaginal delivery was higher in group RC ($p = 0.046$). There were significantly less pruritus ($p = 0.032$) and post partum nausea ($p = 0.045$) in group RC.

Conclusion:

Walking during EPA is a sort of per-proedural rehabilitation. It is an old and a new concept at the same time: recent literature is actually poor. In our department, we believe in walking efficiency during obstetrical labor and through this study we tried to optimize our analgesic management by comparing 2 drugs: Clonidine and Sufentanil. We didn't find an important impact on the labor course excepted of second phase duration. The analgesia quality and the satisfaction was comparable but, it seems that Clonidine is better tolerated. These results prove that Clonidine may be an interesting alternative to

Sufentanil but further studies are needed.

Table 1: Comparison between blood pressure evolution in the two groups

	T0	T1	T2	T3	T4	T5	T6
Mean systolic BP before walking	126.46	122.29	121	120	120	121.96	122
RS group							
Mean systolic BP before walking	129.08	123.81	122	118	126	123.71	122
RC group							
p	>0.05	<0.005	>0.05	>0.05	>0.05	>0.05	>0.05
Mean diastolic BP before walking	83.83	78.5	78.42	78.9	79	79.29	82
RS group							
Mean diastolic BP before walking	78	74	77.48	74.26	76	76.53	85.09
RC group							
p	<0.005	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05
Mean systolic BP after walking	122	120.8	129	117	122	124	124
RS group							
Mean systolic BP after walking	121.2	121	122	118	126	124	128
RC group							
p	>0.05	>0.05	<0.005	>0.05	>0.05	>0.05	>0.05
Mean diastolic BP after walking	70	74.2	75.1	74	74.8	76.9	74.3
RS group							
Mean diastolic BP after walking	72	70	72.9	70.1	76.1	73	68
RC group							
p	>0.05	>0.05	>0.05	>0.05	>0.05	>0.05	<0.005

*T0: timing of the first bolus; *5min*[T₁-T₀]=15 min*BP: blood pressure; RC: ropivacaine+clonidine*RS: ropivacaine+sufentanil

Table 2: Comparison between heart rate evolution in the two groups

	T0	T1	T2	T3	T4	T5	T6
Mean HR before walking	98.9	89.9	85	82.3	90.5	90.6	85
RS group							
Mean HR before walking	95	79.5	82	94	89.9	88.9	82.3
RC group							
p	>0.05	<0.005	>0.05	>0.05	>0.05	>0.05	>0.05
Mean HR after walking	101	92	90.09	84	82	103.5	68.5
RS group							
Mean HR after walking	102.2	88	93.06	98.5	88.5	86.4	75.67
RC group							
p	>0.05	>0.05	>0.05	>0.05	>0.05	<0.005	>0.05

*T0: timing of the first bolus; *5min*[T₁-T₀]=15 min*HR: Heart Rate*RC: ropivacaine+clonidine*RS: ropivacaine+sufentanil

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