Analgesia for cesarean section: comparison between continuous wound infusion and i.v. analgesics.

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Background and Goal of study:

Cesarean section is one of the most common surgical procedures in the world¹, postoperative pain is often a challenge and its inadequate control can prolong recovery and increased incidence of chronic pain².
The aim of this prospective, randomized, observational study was to assess the analgesic efficacy of two different methods to pain control after cesarean section.

Materials and Methods:

Seventy women (ASA I-II) undergoing elective cesarean section were enrolled in the study, after the acquisition of written informed consent. Each patient underwent a spinal anesthesia (isobaric levobupivacaine 11 mg and fentanyl 10 mcg). Women were allocated by daily randomization into two groups, in GR-A (n= 37) patients were treated with i.v. elastomer (tramadol 400 mg, ketoprofen 400 mg, droperidol 2.5 mg and NS up to 100 ml, at 2 ml/h). In GR-B (n= 33) was placed a continuous wound infusion catheter (levobupivacaine 0.125%, 250 ml, at 5 ml/h).
Primary outcome: average pain intensity at rest in postoperative (PO) 24 and 48 hours evaluated by NRS (Numeric Scale Ratio), with readings at set intervals (0, 3, 6, 9, 12, 24, 36, 48 PO hours).
Secondary outcomes: request for additional analgesics in the three PO days, the appearance of adverse effects, the time for the first self-mobilization and length of hospital stay (LOS).
Statistical analyzes were performed using the t test or the Anova test for continuous variables, categorical variables were processed by the Chi² test or Fischer's exact test. A p<0.05 was considered statistically significance.

Variables	All patients			Groups [Mean (±SD) o n° (%)]		p-value
	Min	Max	Mean (±SD) o n° (%)	A	B	
Age (years)	21	52	34.96 ±6.20	34.76 ±6.72	35.18 ±5.66	n.s.
Gestational age (weeks)	35	41	38.39 ±0.92	38.38 ±0.83	38.39 ±1.03	n.s.
Fetal weight (grams)	1815	4810	3309.93 ±467.5	3338.93 ±420.36	3277.42 ±520.01	n.s.
Parity	nullipara		22 (31.4)	11 (29.7)	11 (33.3)	n.s.
	primipara		39 (55.7)	22 (59.5)	17 (51.5)	
	multipara		9 (12.9)	4 (10.8)	5 (15.2)	
CS indication	Previous CS		43 (61.4)	22 (59.5)	21 (63.6)	n.s.
	Others		27 (38.6)	15(40.5)	12 (36.4)	

Tab. 1 Demographics

Results and discussion:

Demographic aspects of women were not different between the two groups (Tab.1). The average value of NRS in the first postoperative 24 hours was 3.33 +/-1.7 SD in GR-A and 2.37 +/-0.75 SD in the GR-B, p= 0.0004 (Graph. 1). Considering the average value of NRS in the first 48 hours in the GR-A was 3.08 +/-1.47DS and GR-B 2.41 +/-1.24 SD, p= 0.046 (Graph. 2).
In day one analgesia rescue was required in 19 patients in GR-A (51.4%) and 9 patients in GR-B (27.3%), p= 0.040. In the second day 22 patients required rescue therapy in GR-A (59.5%) and 10 patients in GR-B (30.3%), p= 0.015. In the third day the value was in GR-A 22 patients (59.5%) and in GR-B 8 patients (24.2%), p=0.003 (Graph. 3). There were no significant differences in the two groups as regards the appearance of adverse effects, the first autonomous mobilization and LOS.

Graph. 1 – Mean NRS 24 h

Graph. 2 – Mean NRS 48 h

Graph. 3 – Rescue Analgesics

Conclusions:

Our experience has shown the superiority of continuous wound infusion in pain control after cesarean section. In the future may be of interest to assess the impact of this technique on the ability of patients to take care of their child, for example, the quality of breastfeeding.

References:

1. Ecker JL et al. *Cesarean delivery and the risk-benefit calculus*. N Eng J Med 2007;356:885-8.
2. Lavand'homme P *Postcesarean analgesia: effective strategies and association with chronic pain*. Curr Opin Anesthesiol 2006; 19:244-248.

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