PERIOPERATIVE ADMINISTRATION OF LIDOCAINE AND DEXMEDETOMIDINE FOR THE PREVENTION OF CHRONIC POSTOPERATIVE PAIN DEVELOPMENT. A CLINICAL STUDY

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Background and aims: Chronic postoperative pain (CPP) may represent a significant problem for surgical patients. We assessed the efficacy of perioperative lidocaine and dexmedetomidine in preventing CPP.

Methods: In this double-blind study, 51 women, 30-70y, ASA I-II, scheduled for abdominal hysterectomy/myomectomy, were randomized to receive lidocaine or dexmedetomidine or placebo. Before anaesthesia induction, a loading dose was given to all patients as an intravenous infusion at a rate of 0.9ml/kg/h for 10 minutes, followed by a rate of 0.15ml/kg/h until last suture. Syringes were identical, containing either lidocaine 10mg/ml (loading dose 1.5mg/kg, maintenance dose 1.5mg/kg/h), or dexmedetomidine 4µg/ml (loading dose 0.6mcg/kg, maintenance dose 0.6mcg/kg/h), or NaCl 0.9%. After a close 48h postoperative observation, the patients were evaluated for CPP at 3, 6 and 12 months.

Results: Data from 42 women were analyzed. Regardless of group, higher NRS (Numerical Rating Scale) cough scores at 48h were associated with higher NRS scores at 3 (p=0.01) and 6 months (p=0.03). Lidocaine was associated with superior (p=0.014) and earlier pain reduction (at 6 months) compared with dexmedetomidine (p=0.005) and placebo (p=0.001) at 12 months.

Regarding neuropathic pain, higher NRS cough values at 48h were associated with higher DN4 values at 6 (p=0.02) and 12 months (p=0.04). Finally, DN4 values were significantly reduced at 12 months compared to the 3-month values for both lidocaine (p=0.007) and dexmedetomidine groups (p=0.029).

LIDO GROUP

- Initial bolus: 1.5 mg/kg (in 10 min)
- Continuous infusion: 1.5 mg/kg/h

DEX GROUP

- Initial bolus: 0.6 mcg/kg (in 10 min)
- Continuous infusion: 0.6 mcg/kg/h

CONTROL GROUP

- N/S 0,9%

			Neuropathic Pain					
			3 months		6 months		12 months	
			patients	%	patients	%	patients	%
Group	LID	No	13	92,9%	14	100,0%	14	100,0%
		Yes	1	7,1%	0	0,0%	0	0,0%
	DEX	No	10	83,3%	11	91,7%	12	100,0%
		Yes	2	16,7%	1	8,3%	0	0,0%
	Control	No	10	62,5%	13	81,3%	14	87,5%
		Yes	6	37,5%	3	18,8%	2	12,5%

Indicative Sources:
Bailey et al, 2018
Brandsborg et al, 2008
Dholakia et al, 2007
Lavand'homme, P, 2017
Shiptonet al, 2014
Sykioti et al,2015

Conclusions: Lidocaine was superior regarding the duration and intensity of CPP, while both dexmedetomidine and lidocaine exhibited a protective effect against the neuropathic elements of CPP.