



Pain Management with CryoNerve Block in Patients Undergoing Coronary Artery Bypass Grafting.

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AIM

To investigate the impact of Cryo Nerve Block with cryoICE™ device utilization, on post-operative pain in patients undergoing isolated robotic-assisted CABG through left thoracotomy.

METHODS

All consecutive patients undergoing isolated CABG through left thoracotomy between July 2021 and July 2022 from a single surgeon were included in the study. Patients using the cryoICE™ device for nerve block were compared for baseline demographics and pre-operative characteristics with those that did not use the cryoICE™ device. A propensity-adjusted analysis was used to compare the two groups. The primary outcome was degree of incisional pain and numbness.

Pain Questionnaires Outcomes for CryoICE	Patients N=60 Mean Values
Pain at discharge (scale 0-10)	1.5
Pain at follow-up (scale 0-10)	0.69
Skin Numbness at discharge (scale 0-10)	1
Skin Numbness at follow-up (scale 0-10)	0.57
Skin Hypersensitivity at discharge (scale 0-10)	1.1
Skin Hypersensitivity at follow-up (scale 0-10)	0.9
Pain affecting sleep at discharge (scale 0-10)	0.34
Pain affecting sleep at follow-up (scale 0-10)	0.34
Pain affecting breathing at discharge (scale 0-10)	0.34
Pain affecting breathing at follow-up (scale 0-10)	0.34
Pain with movement at discharge (scale 0-10)	1.15

In-hospital drugs use	cryoICE™ Patients N = 60	Non-cryoICE™ Patients N = 43	p-value	All Patients N=103
<u>Intra-operative drugs</u>				
Fentanyl IV mcg mean ±SD	205.8 ± 82.9	206.4 ± 106.2	0.977	206.1 ± 92.8
Ketorolac IV mg mean ±SD	12.0 ± 11.6	16.4 ± 13.8	0.085	13.8 ± 12.7
Lidocaine IV mg mean ±SD	21.3 ± 62.6	9.5 ± 15.9	0.229	16.4 ± 49.1
<u>Post-operative drugs</u>				
Oxycodone oral mg mean ±SD	27.8 ± 47.4	23.3 ± 27.8	0.584	23.3 ± 40.3
Hydromorphone IV mg mean ± SD	6.0 ± 7.0	10.8 ± 14.1	0.025	8.0 ± 10.8

RESULTS

A total of 103 patients underwent isolated CABG through left thoracotomy. After matching, the cryoICE™ device was used for nerve block in 60 patients while the control group included 43 patients. Mean follow-up was 5.7 months. The cryoICE™ device group had a mean value of incisional pain at hospital discharge was 1.5 (scale 0-10) while at follow-up was 0.69 (scale 0-10). Mean values of skin numbness at hospital discharge were 1 (scale 0-10) and 0.57 (scale 0-10) at follow-up. After univariate analysis comparison of cryoICE™ device group (60 patients) versus non-cryoICE™ device group (43 patients), the total in-hospital morphine use was 49% lower in the cryoICE™ versus the non-cryoICE™ cohort (73.8 + 79.37 mg vs 144.1 + 118.99 mg).

CONCLUSION

Good clinical outcomes were observed in patients undergoing isolated left thoracotomy CABG with cryoICE™ utilization, including a very low incidence of post-operative pain, numbness, and hypersensitivity for all comers.