

A Review of Peripheral Nerve Blocks in Patients undergoing Major Lower- Limb Amputation in an Acute General Hospital

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Background and Aims of Study

Patients undergoing major lower limb amputation (MLA) are of higher American Society of Anaesthesiologist (ASA) classification with higher risks^{1,2}. Regional anaesthesia is frequently the technique of choice for these patients². This study aims to review the choice of anaesthetic techniques and complications for patients undergoing MLA in our institution from 2014 to 2017.

Methods

The Institutional Review Board's approval was obtained for this retrospective survey. The study team reviewed 239 electronic anaesthetic records in our institution for patients undergoing MLA from 2014 to 2017. The primary outcome for this study was the success rate of peripheral nerve blocks (PNB) and post-operative outcome of 30-days, 90-days and 1-year mortality for these patients.

Results

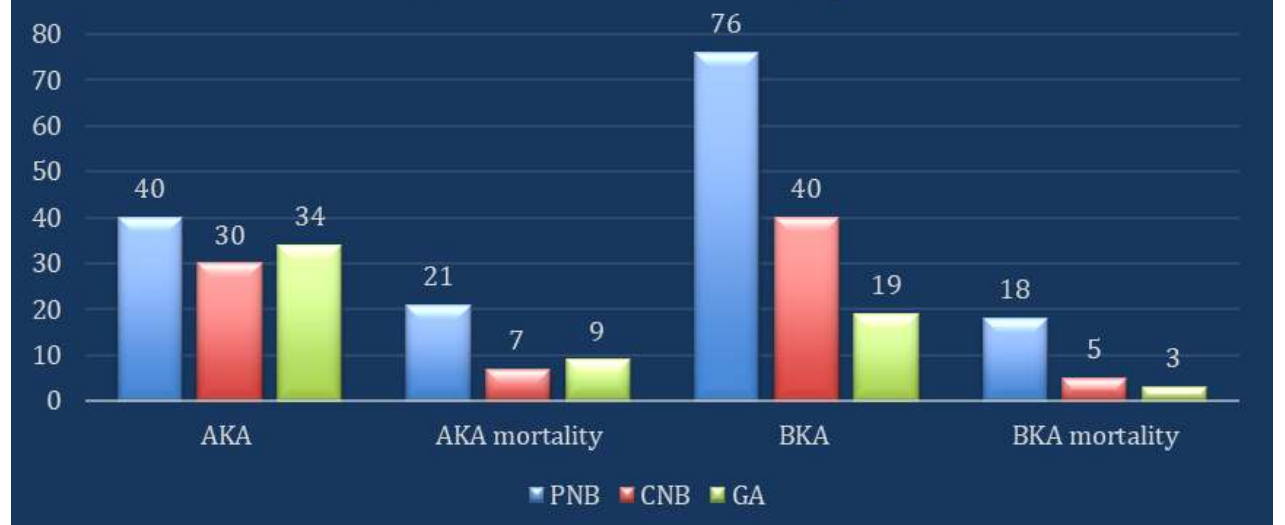
A total of 239 patients had undergone MLA. Of these, 116 patients received PNB, with 97/116 (83.6%) of ASA 3 and 19/116 (16.3%) of ASA 4 and 5. 40/116 (34.4%) patients had above knee amputation (AKA) and 76/116 (65.6%) patients below knee amputation (BKA). 13/116 (11.2%) patients required conversion to GA, with a higher failure rate of 7/40 (17.5%) for AKA compared to 6/76 (7.9%) for BKA. The 30-days, 90-days and 1-year mortality rate for patients who had PNB were 16/116(13.8%), 24/116(20.7%) and 39/116(33.6%), respectively. Table A and Figure 1 show more details of these 239 patients.

Conclusion

Peripheral Nerve Block is the main anaesthetic technique for MLA in our institution with good success rates. The higher mortality rate is likely confounded by the severity of illness and comorbidities of this patient group. Further research is needed to define these comorbidities

TYPE OF ANAESTHETIC		PNB, N = 116 (48.5%)	CNB: N = 70 (29.2%)	GA: N = 53 (22.3%)
TYPE OF SURGERY	AKA	40 (34.5%)	30 (42.8%)	34 (64.2%)
	BKA	76 (65.5%)	40 (57.2%)	19 (35.8%)
ASA CLASS	ASA 1/2	0	5 (7.1%)	12 (22.7%)
	ASA 3	97 (83.6%)	62 (88.7%)	33 (62.2%)
	ASA 4/5	19 (16.3%)	3 (4.2%)	8 (15.1%)
CONVERSION TO GA		PNB, N = 13 (11.2%)	CNB, N = 1 (1.4%)	N/A
TYPE OF SURGERY	AKA	7	0	
	BKA	6	1	
30 DAY MORTALITY, N=25 (25/239 = 10.4%)		PNB, N = 16 (16/116 = 13.8%)	CNB, N = 4 (4/70 = 5.7%)	GA, N = 5 (5/53 = 9.4%)
ASA CLASS	ASA 1/2	0	0	0
	ASA 3	10	4	4
	ASA 4/5	6	0	1
90 DAY MORTALITY, N=38 (38/239 = 15.9%)		PNB, N = 24 (24/116 = 20.7%)	CNB, N = 8 (8/70 = 11.4%)	GA, N = 6 (6/53 = 11.3%)
ASA CLASS	ASA 1/2	0	0	0
	ASA 3	14	8	5
	ASA 4/5	10	0	1
1 YEAR MORTALITY, N=63 (63/239 = 26.3%)		PNB, N = 39 (39/116 = 33.6%)	CNB, N = 12 (12/70 = 17.1%)	GA, N = 12 (12/53 = 22.6%)
ASA CLASS	ASA 1/2	0	0	2
	ASA 3	27	11	6
	ASA 4/5	12	1	4

Figure 1: Number of cases of AKA/ BKA and the 1 year mortality, according to Anesthetic technique



References:

1. Analysis of Patients Undergoing Major Lower Extremity Amputation in the Vascular Quality Initiative. Gabel J, Jabo B, Patel S, Kiang S, Bianchi C, Chiriano J, Teruya T, Abou-Zamzam AM Jr; Vascular Quality Initiative. Ann Vasc Surg. 2018 Jan;46:75-82.
2. Effect of anaesthetic technique on mortality following major lower extremity amputation: a propensity score-matched observational study. Khan SA, Qianyi RL, Liu C, Ng EL, Fook-Chong S, Tan MG. Anaesthesia. 2013 Jun;68(6):612-20