

# Del-Nido Cardioplegia in cardiac surgery for elderly patients: a propensity score-matched analysis

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## Abstract

**OBJECTIVES** To compare the safety and efficacy of del-Nido cardioplegia (DNC) with traditional 4:1 cold blood cardioplegia (CBC) in coronary artery bypass grafting and/or valve surgeries in elderly patients. **METHODS** The present study is a retrospective case-series study that included 302 consecutive patients aged 70 years and over who underwent on-pump valve surgery and/or CABG. DNC was administered to 90 patients and CBC to 212 patients. After propensity-score matching, 89 pairs were compared. The safety and efficacy were analysed between the two groups. **RESULTS** Compared with the CBC group (2185.8±582.9ml,  $P<0.001$ ), the volume of infused cardioplegia was less in the DNC group (1423.6±259.5ml). The DNC group had a lower incidence of postoperative intra-aortic balloon pump (IABP) implantation (1.1% vs 9.0%,  $RR=0.791$ ,  $P=0.034$ ) and higher left ventricular ejection fraction (LVEF) at discharge (58.5±9.1% vs 55.7±8.6%,  $P=0.007$ ). The estimated glomerular filtration rate (eGFR) in the DNC group was higher when the patient was transferred to the intensive care unit (78.2±25.1 ml/min/1.73m<sup>2</sup> vs 69.7±20.2 ml/min/1.73m<sup>2</sup>,  $P=0.021$ ), but no significant differences were identified after 24 hours. The serum lactate values of the DNC group were significantly lower than those of the CBC group (0hrs: 2.8±1.5 vs 3.6±2.0,  $P=0.001$ ; 3hrs: 3.6±2.7 vs 4.9±2.6,  $P<0.001$ ; 6hrs: 4.0±3.0 vs 6.1±3.3,  $P<0.001$ ; 9hrs: 4.4±3.3 vs 5.9±3.6,  $P=0.004$ ). There were no differences between the two groups in respect of lactate levels at 12 hours and thereafter. Postoperative creatinine kinase-MB concentrations were similar between the two groups. **CONCLUSIONS** Del-Nido cardioplegia is safe and effective in elderly patients undergoing CABG and/or valve surgery.

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Variables	DNC (n=89)	CBC (n=89)	RR	Favor DNC   Favor CBC	95% CI	P Value
Death	3 (3.4)	5 (5.6)	0.79		0.45–1.38	0.720
Transfusion	68 (76.4)	62 (69.7)	1.18		0.87–1.60	0.311
IABP	1 (1.1)	8 (9.0)	0.54		0.41–0.71	0.034
ECMO	1 (1.1)	2 (2.2)	0.75		0.33–1.68	1.000
Re-intubation	7 (7.9)	9 (10.1)	0.88		0.56–1.39	0.600
Dialysis	6 (6.7)	7 (7.9)	0.92		0.54–1.56	0.773
Stroke	3 (3.4)	1 (1.1)	2.02		0.37–11.12	0.621
Reoperation	4 (4.5)	2 (2.2)	1.52		0.48–4.75	0.682
Surgical-site infection	4 (4.5)	4 (4.5)	1.00		0.49–2.03	1.000



