

EDARAVONE IS AN EFFECTIVE TOOL IN CONTRAST-INDUCED NEPHROPATHY PREVENTION

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Edaravone is a low-molecular-weight antioxidant drug targeting peroxy radicals of reactive oxygen species. It has shown clinical efficacy in patients with acute ischemic stroke.

Objective. Our data suggest that Edaravone may decrease the incidence of contrast-induced nephropathy (CIN) and acute kidney injury (AKI) in patients with CKD 3b-4 stages (1).

Methods

Analysis of retrospective data included 2 groups of patients aged 44 to 76 (59 ± 3):

- **group A** (n=24) with chronic kidney disease (CKD) stages 3b-4 (eGFR EPI 34 ± 3 ml/min) that received **edaravone iv 30 mg bid** on 0,1,2 day of contrast media infusion procedure
- and **control group B** (n=20) with CKD stages 3b-4 (eGFR EPI 33 ± 3 ml/min) with no edaravone intervention during CT coronagraphy. Patients of both groups received iv hydration with 0.9% sodium before CT.

Primary endpoint: CIN onset in 48 hours after contrast media infusion and need for RRT.

Secondary endpoint: Hyperkalemia (potassium level above 5.5 mmol/l.)

Results. CIN onset was obtained in 4 patients of group A and 12 of group B ($p > .05$, RR 0.417, RRR 0.583, RD 0.350, NNT 2.857). Other results are presented in Table 1.

Parameter	Edaravone Group A (n=24)	Group B (n=20)	Fisher's criterion	P-value
AKI	6	12	0.030	$>.05$; RR 0.417, 95% CI 0,191-0,909, NNT 2.857
Renal replacement therapy need	2	8	0.132	.93
Hyperkalemia	1	6	0.104	NA

The table shows the statistical significance of both endpoints which demonstrates the promising possibilities for CIN and AKI prophylaxis with edaravone in CKD 3b-4. Individual data analyses have shown that edaravone was more effective in CKD 3b (4 cases of CIN of 21) than in CKD 4 (2 of 3) (RR 0,286, 95% CI 0,087-0,940, NNT 2.1)

Conclusion. Edaravone is an effective solution for AKI prevention in patients with CKD 3b who urgently undergo CT coronagraphy.