

Title: A Comparison of Weight-based vs Traditional Nicardipine Dosing for the Management of Hypertensive Emergencies.

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Introduction:

Hypertensive emergencies and their complicating sequelae are significant causes of morbidity and mortality. IV anti-hypertensives, such as nicardipine, are warranted to decrease blood pressure (BP) to indication-specific target BP goals in a timely manner in order to mitigate complications and/or further organ damage. Literature describing the safety and efficacy of weight-based nicardipine dosing is considerably lacking.

Methods:

This retrospective, single-center, observational cohort study compared patients that received IV nicardipine for hypertensive emergencies 6 months before and after an institutional change from traditional to weight-based dosing. Patients ≥ 18 years old that reached their listed target BP goals were included in this study. The primary outcome was time to target BP after initiation of nicardipine. Secondary outcomes included the number of dose titrations and volume needed to reach target, mean rate when target was achieved, and incidence of hypotension.

Results:

77 of 115 patients that received nicardipine over the study period were included in this trial. Patients in weight-based group had a significantly lower initial infusion rate (2.67 mg/hr vs. 4.06 mg/hr; $p=0.0002$). The primary outcome of time to target BP was not significantly different between the traditional and the weight-based dosing groups (143 min vs. 156 min; $p=0.795$). Similarly, no significant differences were seen between the groups for any of the secondary outcomes. Only two patients, both in the weight-based cohort, experienced hypotension.

Conclusions: No meaningful differences were seen between traditional and weight-based dosing strategies for nicardipine in this relatively small retrospective study. Further research and evaluation of the weight-based dosing protocol may be warranted.