PACU LITERATURE REVIEW

REFERENCE

Houseman BS, Martinelli AN, Oliver WD, Devabhakthuni S, Mattu A. High-dose nitroglycerin infusion description of safety and efficacy in sympathetic crashing acute pulmonary edema: The HI-DOSE SCAPE study. *Am J Emerg Med.* 2023;63:74-78.

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SUMMARY

Although optimal initial rates and titration strategies remain unknown, high dose nitroglycerin may be a safe alternative strategy to the use of intermittent bolus nitroglycerin in patients with SCAPE.

BACKGROUND

- Sympathetic crashing acute pulmonary edema (SCAPE) is caused when severe, acute elevation in blood pressure results in acute heart failure and fluid accumulation in the lungs. In addition to non-invasive positive pressure ventilation, high-dose nitroglycerin (HDN) has become a mainstay of treatment, however an optimal dosing strategy has not been established

STUDY OBJECTIVE

- To describe the characteristics and outcomes of patients who received an infusion of HDN for the management of SCAPE

STUDY DESIGN

- Retrospective chart review at an adult ED within a large, tertiary care academic medical center

STUDY INTERVENTION & COMPARISON

- **HDN infusion (rate ≥100 mcg/min within the first hour)**

RESULTS

- **Dosing**
  - Median initial rate: 100mcg/min, median peak rate: 200mcg/min
  - 48% received initial bolus (63% oral, 38% IV)
- **Efficacy**
  - Median SBP decrease 32% from HDN alone
  - Median SBP decrease 37% from HDN + loop diuretic
- **Safety**
  - 31% of patients experienced an unfavorable outcome (intubation (21%), hypotension (4%), or AKI (13%))
    - Baseline SaO_2 significantly lower in those with an unfavorable outcome (94% vs 98% p=0.004)

ADDITIONAL READINGS

- Paone S, Clarkson L, Sin B, Punnapuzha S. Recognition of sympathetic crashing acute pulmonary edema (SCAPE) and use of high-dose nitroglycerin infusion. *Am J Emerg Med*. 2018;36(8):1526.e5–7.
- Stemple K, Dewitt KM, Porter BA, Sheeser M, Blohm E, Bisanzo M. High-dose nitro- glycerin infusion for the management of sympathetic crashing acute pulmonary edema (SCAPE): A case series. *Am J Emerg Med*. 2020 Jun;44:262–6.