



The objective of this study was to compare the incidence of extravasation injury when HTS or mannitol was administered via peripheral i.v. line (PIV)” Mesghali et al (2019).

Abstract:

BACKGROUND: Hypertonic saline (HTS) and mannitol are frequently utilized in the emergency department (ED) to manage elevations in intracranial pressure (ICP).

OBJECTIVE: The objective of this study was to compare the incidence of extravasation injury when HTS or mannitol was administered via peripheral i.v. line (PIV).

METHODS: This retrospective cohort study evaluated adult and pediatric patients given either 3% HTS or mannitol via PIV while in the ED. The primary outcome was extravasation incidence.

RESULTS: One hundred and ninety-two patients were included, of which 85 (44%) received HTS and 107 (56%) received mannitol. Patients who received HTS were younger (27.5 ± 24.3 years vs. 53.9 ± 22.3 years; $p < 0.001$); 55.3% of patients given HTS received it for traumatic brain injury (TBI) versus 38.3% of patients given mannitol ($p = 0.021$); and 44.9% of patients given mannitol received it for intracerebral hemorrhage versus 21.2% of patients given HTS ($p = 0.001$). There was no incidence of extravasation in either group. Patients who received HTS had lower ICP measurement 24 h post admission (2.107 ± 5.5 mm Hg vs. 4.236 ± 8.1

mm Hg; $p = 0.047$) and higher Glasgow Coma Scale (GCS) score upon discharge (GCS 14; interquartile range 3-15 vs. GCS 3; IQR 3-14.2; $p = 0.004$). In-hospital mortality was higher in the mannitol group (54.7% vs. 32.9%; $p = 0.003$). Duration of mechanical ventilation was shorter in those patients who received HTS (1 day; IQR 0-56 days vs. 2 days; IQR 0-56 days; $p = 0.023$). CONCLUSIONS: There were no incidences of extravasation among patients given 3% HTS or mannitol. Clinicians should reconsider recommendations to restrict HTS or mannitol to central lines.

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Reference:

Mesghali, E., Fitter, S., Bahjri, K. and Moussavi, K. (2019) Safety of Peripheral Line Administration of 3% Hypertonic Saline and Mannitol in the Emergency Department. The Journal of Emergency Medicine. February 8th. .

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