Although central venous infusion may reduce the risk of these minor complications, it may increase the risk of more serious complications such as large vessel thrombosis, bloodstream infection, pneumothorax, and arterial injury. The concern regarding the risks of pIV administration of 3% HTS may be overstated and unfounded” Perez and Figueroa (2017).

Abstract:

INTRODUCTION: Hyperosmolar therapy with hypertonic saline (HTS) is a cornerstone in the management of intracranial hypertension and hyponatremia in the neurological intensive care unit. Theoretical safety concerns remain for infiltration, thrombophlebitis, tissue ischemia, and venous thrombosis associated with continuous 3% HTS administered via peripheral intravenous (pIV) catheters. It is common practice at many institutions to allow only central venous catheter infusion of 3% HTS.

METHODS: Hospital policy was changed to allow the administration of 3% HTS via 16- to 20-gauge pIVs to a maximum infusion rate of 50 mL/h in patients without central venous access.
We prospectively monitored patients who received peripheral 3% HTS as part of a quality improvement project. We documented gauge, location, maximum infusion rate, and total hours of administration. Patients were assessed for infiltration, erythema, swelling, phlebitis, thrombosis, and line infection.

RESULTS: There were 28 subjects across 34 peripheral lines monitored. Overall, subjects received 3% HTS for a duration between 1 and 124 hours with infusion rates of 30 to 50 mL/h. The rate of complications observed was 10.7% among all subjects. Documented complications included infiltration (n = 2), with an incidence of 6%, and thrombophlebitis (n = 1), with an incidence of 3%.

CONCLUSIONS: There has been a long concern among healthcare providers, including nursing staff, in regard to pIV administration of prolonged 3% HTS infusion therapy. Our study indicates that peripheral administration of 3% HTS carries a low risk of minor, nonlimb, or life-threatening complications. Although central venous infusion may reduce the risk of these minor complications, it may increase the risk of more serious complications such as large vessel thrombosis, bloodstream infection, pneumothorax, and arterial injury. The concern regarding the risks of pIV administration of 3% HTS may be overstated and unfounded.

Reference:


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