Reports of the administration of vasopressors via PiVCs, when given for a limited duration, under close observation, suggest that extravasation is uncommon and is unlikely to lead to major complications” Tian et al (2019).

Abstract:

OBJECTIVE: Vasopressor medications have traditionally been administered via central venous catheters (CVCs), primarily due to concerns of peripheral extravasation of vasoconstrictive medications. Recent studies have suggested that vasopressor administration via peripheral intravenous catheters (PiVCs) may be a feasible and safe alternative. This systematic review evaluates the safety of delivering vasopressor medications via PiVCs.

METHODS: We performed a systematic review to assess the frequency of complications associated with the delivery of vasopressors via PiVCs. A literature search for prospective and retrospective studies of vasopressor infusions in adults was performed. We included studies of continuous infusions of vasopressor medications (noradrenaline, adrenaline, metaraminol, phenylephrine, dopamine and vasopressin) delivered via a PiVCs that included at least 20 patients. Data on patient factors, cannulation approach, monitoring protocols, vasopressor dosing and dilutions and adverse events were collected and summarised.

RESULTS: Seven studies were identified that fulfilled the inclusion criteria, including 1382 patients. No study fulfilled all of the validity criteria. Noradrenaline was the most commonly administered agent (n = 702 episodes of administration), followed by phenylephrine (n = 546), dopamine (n = 108), metaraminol (n = 74) and vasopressin and adrenaline (<5 patients). Mean duration of infusion was 22 h (95% confidence interval 8-36 h). Extravasation occurred in 3.4% (95% CI 2.5-4.7%) of patients. There were no reported episodes of tissue necrosis or limb ischaemia. All extravasation events were successfully managed conservatively or with vasodilatory medications. CONCLUSIONS: Reports of the administration of vasopressors via PiVCs, when given for a limited duration, under close observation, suggest that extravasation is uncommon and is unlikely to lead to major complications.
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