Protocol-driven peripheral administration of lower concentration phenylephrine in an ICU setting is safe and feasible” Ballieu et al (2019).

Abstract:

BACKGROUND/OBJECTIVE: Blood pressure optimization and maintenance of cerebral and spinal perfusion pressure are mainstays in the treatment of a neurocritically ill patient. Traditionally, central venous access has been required for vasopressor administration, with risk of inherent complications. The authors have previously reported pilot data on the safety of peripheral administration of phenylephrine in a neurocritical care unit. In this follow-up, we report the safety, feasibility, and potential efficacy of peripheral administration of low-concentration phenylephrine in a more robust cohort.

METHODS: A retrospective chart review was conducted on all consecutive patients who received peripheral phenylephrine in a tertiary care hospital neurocritical care unit.

RESULTS: A cohort of 125 patients were identified and included in the final analysis. The average age was 59.3 years, with an average intensive care unit (ICU) length of stay of 7.61 days. The most common indication for phenylephrine use was spinal perfusion (both with/without neurogenic shock) in 38.4% of cases, followed by postsurgical/anesthesia resuscitation in 16.8% of cases; 25.6% of patients in our cohort required escalation to central venous access (central venous catheter + peripherally inserted central catheter). A total of
2880 patient-hours were recorded with peripheral phenylephrine infusion, of which 73.9% were at goal blood pressure (either systolic or mean arterial pressure). Only one major complication of thrombophlebitis and 8 minor complications were recorded.

CONCLUSIONS: Protocol-driven peripheral administration of lower concentration phenylephrine in an ICU setting is safe and feasible. This strategy is potentially effective at achieving hemodynamic targets in the majority of patients avoiding the need for central venous access.

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