

**Unintentional catecholamine flush caused by inappropriate release of an intravenous occlusion during use of a syringe pump in the intensive care unit (ICU) can have dangerous consequences in patients receiving critical care. We investigated whether anesthesiology residents understood how to deal with syringe pump occlusion in a simulated ICU setting” Kariya et al (2017).**

Abstract:

**INTRODUCTION:** Unintentional catecholamine flush caused by inappropriate release of an intravenous occlusion during use of a syringe pump in the intensive care unit (ICU) can have dangerous consequences in patients receiving critical care. We investigated whether anesthesiology residents understood how to deal with syringe pump occlusion in a simulated ICU setting.

**METHODS:** We set up a mannequin that virtually simulated a sedated patient under mechanical ventilation after cardiac surgery, with epinephrine and dopamine being infused by syringe pumps to maintain blood pressure at 100/50 mm Hg. Prior to a participant entering the simulated ICU, one of the stopcocks for the catecholamine was occluded. Thereafter, the blood pressure of the mannequin dropped to 60/30 mm Hg. If the participant inappropriately released the occlusion, resulting in a catecholamine flush, an operator immediately elevated the blood pressure to 200/100 mm Hg. In the subsequent debriefing session, the simulation facilitator evaluated whether the participant could diagnose that intravenous occlusion was the cause of hypotension in this scenario.

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**RESULTS:** Sixteen anesthesiology residents participated in the study. Only 3 of 10 participants who had previous knowledge of how such situations should be handled could appropriately release back pressure. Eleven residents released the occlusion without relieving syringe pressure. After their debriefing sessions, all the participants were of the opinion that the present simulation training was impressive and useful for them.

CONCLUSIONS: Anesthesiology residents might inappropriately handle a situation of intravenous occlusion in their clinical practice. It may be necessary for the manufacturers to improve the safety features of syringe pumps.

Reference:

Kariya, T., Miyashita, T., Sato, H., Kawakami, H. and Goto, T. (2017) Behavior of Anesthesiology Residents in a Situation of Intravenous Route Occlusion During Syringe Pump Use in a Simulated Intensive Care Unit. *Journal of Patient Safety*. November 4th. .

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