



The Ambu Smart-Infuser Pain Pump and the On-Q Pump with Select-a-Flow Variable Rate Controller are elastomeric devices with a flow regulator that controls the rate of infusion of a local anesthetic agent through a peripheral catheter” Iliev et al (2016).

Abstract:

BACKGROUND: The Ambu Smart-Infuser Pain Pump and the On-Q Pump with Select-a-Flow Variable Rate Controller are elastomeric devices with a flow regulator that controls the rate of infusion of a local anesthetic agent through a peripheral catheter. As a safety evaluation, we evaluated the infusion characteristics of these two devices when filled with manufacturer recommended standard volumes and when overfilled with a volume 50% in excess of that which is recommended.

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METHODS: Nineteen disposable devices from the two manufacturers were used in this study. Nine were filled with 0.9% normal saline according to the respective manufacturers' recommendations (four Ambu pumps were filled with 650 ml and five On-Q pumps were filled with 550 ml) and 10 devices were 150% overfilled (five Ambu pumps were filled with 975 ml and five On-Q pumps were filled with 825 ml). All of the devices were set to infuse at 10

ml·h⁻¹ at room temperature (21°C) for 12 h. The fluid delivered during each 2-h period was measured using a graduated column.

RESULTS: The On-Q pump (in the settings of normal fill and 150% overfill) delivered a significantly higher output per hour than the set rate during the first 8 h, while the Ambu pump delivered a value close to the set rate of 10 ml·h⁻¹. No significant difference in the hourly delivered output was noted for either device when comparing the normal fill to the 150% overfill groups.

CONCLUSIONS: This investigation demonstrates that no change in the hourly output occurs with overfilling of these home infusion devices. However, as noted previously, the hourly output from the On-Q device is significantly higher than the set rate during the initial 8 h of infusion which could have potential clinical implications.

Reference:

Iliev, P., Bhalla, T. and Tobias, J.D. (2016) A comparison of the hourly output between the Ambu® Smart-Infuser™ Pain Pump and the On-Q Pump® with Select-A-Flow™ Variable Rate Controller with standard and overfill volumes. Paediatric Anaesthesia. January 20th. .

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