



“This study indicated that the delivery rate accuracy of elastomeric infusion pumps is preserved after repeated usage. These laboratory findings suggested that elastomeric pumps could be safely refilled in the successive days to provide postoperative analgesia.” Mohseni and Ebnesahidi (2014).

Reference:

Mohseni, M. and Ebnesahidi, A. (2014) The flow Rate Accuracy of Elastomeric Infusion Pumps After Repeated Filling. *Anesthesiology and Pain Medicine*. 4(2), p.e14989.

Flow rate accuracy of refilled elastomeric infusion pumps [@ivteam](http://ctt.ec/k7K0Z+) #ivteam

Click To Tweet

Abstract:

BACKGROUND: One of the frequent applications of elastomeric infusion pumps is postoperative pain management. In daily practice, the disposable pumps get refilled with modified medication combinations in the successive days; although, the accuracy of infusion rates is unknown to clinicians.

OBJECTIVES: Our aim was to evaluate the effect of repeated filling on the delivery rate accuracy of an elastomeric pump available in our market.

MATERIALS AND METHODS: We examined 10 elastomeric infusion pumps (BOT-802, Nanchang Biotek Medical Device Company, China) with 100 mL capacity and nominal flow of 5 mL/h. Each pump was filled for three times, accounting for 30 series of experiments. A microset scaled in mL was used to measure the pump deliveries. Flow profile and reliability of infusion rate were analyzed after repeated use.

RESULTS: The mean flow rate in the three series of measurements showed a gradual increase; however, the difference was not statistically significant (5.01 ± 0.07 vs. 5.03 ± 0.06 vs. 5.06 ± 0.08 mL/h; $P = 0.81$). The percentage of the flow rate error (deviation from 5 mL/h $\pm 15\%$) was 100% in the first and second hours of infusion, 96% in the third hour, 60% in the 20th hour and zero percent in the rest of the infusion time.

CONCLUSIONS: This study indicated that the delivery rate accuracy of elastomeric infusion pumps is preserved after repeated usage. These laboratory findings suggested that elastomeric pumps could be safely refilled in the successive days to provide postoperative analgesia.

[Click here for full text.](#)

Other intravenous and vascular access resources that may be of interest (External links - IVTEAM has no responsibility for content).

Guide for intravenous chemotherapy and associated vascular access devices from Macmillan. CancerUK IV chemotherapy information.

