



The use of pre-filled saline syringes significantly reduced peripheral venous catheter failure and increased catheter dwell time. Thus, it is important to reinforce the use of the pre-filled syringes for flushing to reduce the incidence of peripheral venous catheters' failure" Saliba et al (2019).

Abstract:

BACKGROUND: Short peripheral venous catheters are one of the most frequently used devices in hospitals. Peripheral venous catheter failure, defined as the unscheduled dysfunction of peripheral venous catheter, is common and frequently entails a new invasive procedure. Flushing the catheter maintains patency and could prolong peripheral venous catheter dwell time. The introduction of pre-filled saline flushing syringes as compared to manually filled saline flushing syringes could facilitate the frequency of catheter flushing, and subsequently it could reduce peripheral venous catheter failure rate.

OBJECTIVE: To demonstrate differences in overall peripheral venous catheter failure rates before and after the introduction of pre-filled saline flushing syringes and to assess the risk factors for peripheral venous catheter failure.

METHODS: Quasi-experimental design, before-and-after intervention study. Intervention: introduction of pre-filled saline syringes for flushing. Multicenter study conducted in medical

and surgical wards of three European hospitals during a 9-month period (4 months pre-intervention, 5 months intervention). A multivariate Cox proportional model was used to identify factors associated with the occurrence of peripheral venous catheter failure.

RESULTS: Data from 3853 peripheral venous catheters in 1915 patients were analyzed. Compared to pre-intervention period, a significant decrease in peripheral venous catheter failure rate was observed in the intervention period (57% vs 43.4%, $p < 0.001$). Independent factors associated with peripheral venous catheter failure were as follows: Charlson score ≥ 4 (hazard ratio: 1.648; 95% confidence interval: 1.069-2.527), days of hospital stay ≥ 10 (hazard ratio: 1.468; 95% confidence interval: 1.172-1.837), and catheter "D" (hazard ratio: 1.758; 95% confidence interval: 1.058-2.919). **CONCLUSION:** The use of pre-filled saline syringes significantly reduced peripheral venous catheter failure and increased catheter dwell time. Thus, it is important to reinforce the use of the pre-filled syringes for flushing to reduce the incidence of peripheral venous catheters' failure.

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Reference:

Saliba, P., Cuervo, G., Hornero, A., De Carli, G., Marani, A., Puro, V., Felisa López, A., Iftimie, S., Castro, A., Diaz-Brito Fernandez, V., Alvarez Moya, M.C., Jimenez De La Rosa, C., Martínez-Sánchez, J., Jimenez, E., Carratalà, J. and Pujol, M. (2019) The impact of flushing with pre-filled saline syringes on the incidence of peripheral venous catheter failure: A quasi-experimental study. *The Journal of Vascular Access*. November 25th. doi: 10.1177/1129729819888423. .

