"This study aimed to develop an algorithm using US-assisted PIV placement to reduce CF rate. Furthermore, to evaluate the effectiveness of the algorithm, CF rates were compared before and after intervention" Kanno et al (2020).

Abstract:

Up to 50% peripheral intravenous catheters (PIVs) are removed prematurely because of failures. Catheter failure (CF) leads to replacement and is a great concern for patients and medical staff. It is known that visualization of catheters and vessels with ultrasonography (US) during placement prevents CF. However, US is not a common technique for general nurses. In order to standardize US-assisted PIV placement techniques, an algorithm is needed. This study aimed to develop an algorithm using US-assisted PIV placement to reduce CF rate. Furthermore, to evaluate the effectiveness of the algorithm, CF rates were compared before and after intervention. A pretest-posttest study was performed. The intervention was PIV placement by 23 nurses undergoing training sessions for the algorithm. Intention to treat, per protocol analyses were applied. Logistic regression analysis was used for factor analysis. The CF rate in the pre-intervention group 35.2% (19/54) did not significantly differ from post-intervention group 33.6% (48/143) (p = 0.831), yet significantly differ from complete algorithm-use group 8.7% (2/23; p = 0.017). In factor analysis, compliance to the algorithm was significantly correlated with CF (p = 0.032). The compliance rate was low 16.1% (23/143). Algorithm compliance reduced CF by confirming appropriate catheter tip position from the insertion to the securement phase. This algorithm effectively reduced CF, however, the compliance rate was unacceptable. In order to increase the compliance rate, modified

algorithm and new visualizing technology is required. Full Text
You may also be interested in
Assisted tunneled cuffed central catheter placement
Peripheral intravenous catheter placement experience in pediatrics
Training nurses in ultrasound-guided peripheral intravenous catheter placement

Reference:

Kanno, C., Murayama, R., Abe-Doi, M., Takahashi, T., Shintani, Y., Nogami, J., Komiyama, C. and Sanada, H. (2020) Development of an algorithm using ultrasonography-assisted peripheral intravenous catheter placement for reducing catheter failure. Drug Discoveries & Therapeutics. 14(1), p.27-34. doi: 10.5582/ddt.2019.01094.

I enjoyed reading... Algorithm for using ultrasonography-assisted peripheral intravenous catheter placement

Share Tweet