

“Better insertion techniques may be sought to lower the incidences of PIVC complications, thus extending their onset beyond day 3” Abolfotouh et al (2014).

Reference:

Abolfotouh, M.A., Salam, M., Bani-Mustafa, A., White, D. and Balkhy, H.H. (2014) Prospective study of incidence and predictors of peripheral intravenous catheter-induced complications. Therapeutics and Clinical Risk Management. December 8th. eCollection.

Study suggests better peripheral IV catheter insertion reduces complications
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Abstract:

BACKGROUND: Although intravenous therapy is one of the most commonly performed procedures in hospitalized patients, it remains susceptible to infectious and noninfectious complications. Previous studies investigated peripheral intravenous catheter (PIVC) complications mainly in pediatrics, but apparently none were investigated among Saudi adult populations. The aim of this study was to assess the pattern and complications of PIVCs at King Abdulaziz Medical City (KAMC), Riyadh, Saudi Arabia.

METHODS: An observational prospective cohort study investigated PIVCs pattern and complications among adults with PIVCs, admitted to various wards at KAMC. PIVCs-related clinical outcomes (pain, phlebitis, leaking, and others) were recorded in 12-hour intervals, using the Visual Inspection Phlebitis scale. Density incidence (DI) and cumulative incidence (CI) of complications and their relative risks (RRs) were calculated. Regression analyses were applied and significance limits were set at $P < 0.05$.

RESULTS: During the study period, 359 adults were included, mounting to 842 PIVCs and 2,505 catheter days. The majority of patients, 276 (76.9%), had medical, chief admission complaints, whereas 83 (23.1%) were trauma/surgical and infectious cases. Complicated catheters were found in 141 (39.3%) patients, with 273 complications (32.4/100 catheters), in 190 complicated catheters (CI = 22.56/100 catheters and DI = 75.84/1,000 catheter days). Phlebitis ranked first among complications, 148 (CI = 17.6%), followed by pain 64 (CI = 7.6%), leaking 33 (CI = 3.9%), dislodgement 20 (CI = 2.4%), and extravasations and occlusion 4 (CI = 0.5% each). Phlebitis was predicted with female sex ($P < 0.001$), insertion in fore/upper arm ($P = 0.024$), and infusion of medication ($P = 0.02$). Removal time for PIVCs



insertion was not a significant predictor of phlebitis (RR =1.46, P=0.08).

CONCLUSION: Incidence of complications in this study was significantly higher than rates in previous studies. Better insertion techniques may be sought to lower the incidences of PIVC complications, thus extending their onset beyond day 3. Changing catheters is recommended when clinically indicated rather than routinely post-72 hours.

Full Text

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