While midline vascular catheters are gaining popularity in clinical practice, patterns of use and outcomes related to these devices are not well known" Chopra et al (2019).

Abstract:

BACKGROUND: While midline vascular catheters are gaining popularity in clinical practice, patterns of use and outcomes related to these devices are not well known.

METHODS: Trained abstractors collected data from medical records of hospitalised patients who received midline catheters in 12 hospitals. Device characteristics, patterns of use and outcomes were assessed at device removal or at 30 days. Rates of major (upper-extremity deep vein thrombosis , bloodstream infection and catheter occlusion) and minor complications were assessed. $\chi 2$ tests were used to examine differences in rates of complication by number of lumens, reasons for catheter removal l, and hospital-level differences in rates of midline use.

RESULTS: Complete data on 1161 midlines representing 5%-72% of all midlines placed in participating hospitals between 1 January 2017 and 1 March 2018 were available. Most (70.8%) midlines were placed in general ward settings for difficult intravenous access (61.4%). The median dwell time of midlines across hospitals was 6 days; almost half (49%) were removed within 5 days of insertion. A major or minor complication occurred in 10.3% of midlines, with minor complications such as dislodgement, leaking and infiltration accounting for 71% of all adverse events. While rates of major complications including occlusion, upper-extremity DVT and BSI were low (2.2%, 1.4% and 0.3%, respectively), they were just as likely to lead to midline removal as minor complications (53.8% vs 52.5%, $p=0.90$). Across hospitals, absolute volume of midlines placed varied from 100 to 1837 devices, with corresponding utilisation rates of 0.97%-12.92% ($p<0.001$). CONCLUSION: Midline use and outcomes vary widely across hospitals. Although rates of major complications are low, device removal as a result of adverse events is common.

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Reference:

Chopra, V., Kaatz, S., Swaminathan, L., Boldenow, T., Snyder, A., Burris, R., Bernstein, S.J. and Flanders, S. (2019) Variation in use and outcomes related to midline catheters: results from a multicentre pilot study. BMJ Quality & Safety. March 18th. . doi: 10.1136/bmjqs-2018-008554.