The risk of catheter failure may not remain constant throughout the dwell time. The results suggest that nurses should assess the insertion site frequently in the first 38 h” Wei et al (2019).

Abstract:

AIMS AND OBJECTIVES: To explore whether the risk of peripheral venous catheters failure remained constant throughout catheter use in adult patients.

BACKGROUND: Peripheral venous catheters, widely used in adult patients, may have a critical threshold dwell time associated with increased risk of catheter failure.

DESIGN: Prospective, observational study. We have complied with the STROBE Checklist of items.

METHODS: This study was conducted from July to October 2018 in Hunan, China. Data on patient factors, catheter factors, and catheter failure events were collected. Poisson regression was used to assess the effect of catheter dwell time on catheter failure while adjusting for other variables.

RESULTS: A total of 1477 patients were included in the analysis. There were 854 cases (57.8%) of catheter failure. The median dwell time to catheter failure was 52 h (interquartile range: 36-73 h). The incidence rate of catheter failure significantly increased by 1.1%/h in the first 38 h after catheter insertion. From 39-149 h, the incidence rate significantly decreased, and at >149 h, there was no significant change in the incidence rate. Meanwhile, factors like vascular quality and infused drugs showed having an impact on catheter failure events.

CONCLUSIONS: The risk of catheter failure may not remain constant throughout the dwell time. The results suggest that nurses should assess the insertion site frequently in the first 38 h.

RELEVANCE TO CLINICAL PRACTICE: The significant increase in the risk of catheter failure per hour may warrant close and frequent inspection of insertion site during the first 38 hours.
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