The aim of this study was to investigate whether clinicians can estimate the length of time a central venous catheter (CVC) will remain in place and to identify variables that may predict CVC duration" Holmberg et al (2015).

Abstract:

PURPOSE: The aim of this study was to investigate whether clinicians can estimate the length of time a central venous catheter (CVC) will remain in place and to identify variables that may predict CVC duration.

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MATERIALS AND METHODS: We conducted a prospective study of patients admitted to the intensive care unit over a 1-year period. Clinicians estimated the anticipated CVC duration at time of insertion. We collected demographics, medical history, type of intensive care unit, anatomical site of CVC placement, vital signs, laboratory values, Sequential Organ Failure Assessment score, mechanical ventilation, and use of vasopressors. Pearson correlation coefficient was used to assess the correlation between estimated and actual CVC time. We performed multivariable logistic regression to identify predictors of long duration (>5 days).

RESULTS: We enrolled 200 patients; median age was 65 years (quartiles 52, 75); 91 (46%) were female; and mortality was 24%. Correlation between estimated and actual CVC time was low ($r = 0.26$; $r2 = 0.07$; $P < .001$). Mechanical ventilation (odds ratio, 2.20; 95% confidence interval, 1.22-3.97; $P = .009$) at time of insertion and a medical history of cancer (odds ratio, 0.35; 95% confidence interval, 0.16-0.75; $P = .007$) were significantly associated with long duration.

CONCLUSION: Our results suggest a low correlation between clinician prediction and actual CVC duration. We did not find any strong predictors of long CVC duration identifiable at the time of insertion.

Reference:

Holmberg, M.J., Andersen, L.W., Graver, A., Wright, S.B., Yassa, D., Howell, M.D., Donnino, M.W. and Cocchi, M.N. (2015) Estimating duration of central venous catheter at time of insertion: Clinician judgment and clinical predictors. Journal of Critical Care. August 22nd. .

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