Abstract:

Background: This study aimed to determine the frequency of peripheral venous catheter-
related complications and the risk factors that have an impact on the time of peripheral
venous catheter failure when they were replaced as clinically indicated.

Methods: This was a prospective observational study. The demographic and clinical
characteristics of the patients, as well as the catheter specifications, were recorded. All the
catheters were followed-up at 12-h intervals for the development of complications. Two
different peripheral venous catheters were used in the study. The catheter dwell times were
estimated using Kaplan-Meier analysis. The logrank test was utilized to investigate the
catheter dwell times by univariate analyses. Variables with a significance level of less than
0.20 were taken into Cox regression analysis.

Results: Our results revealed that phlebitis and nonphlebitis complications occurred more
frequently within the first 96 h. No significant difference was observed in the occurrence
time of phlebitis, nonphlebitis, and composite failures. The use of a locally manufactured
catheter, unsuccessful first attempt, poor skin integrity, after-hours' insertion, the use of
sterile gauze dressing were all associated with shorter catheter survival rates.

Conclusion: We observed no difference on the time to phlebitis or nonphlebitis symptoms
with clinically indicated replacement of peripheral venous catheters. We found a significant
difference in survival rates between locally manufactured and imported peripheral venous
catheters. Our identified risk factors should be taken into account to reduce peripheral
venous catheter-related complications and to increase dwell time.

Reference:

Ozger, H. S., Yasar, M., Başıyurt, R., Bucak, F., and Dizbay, M. (2020) Evaluation of the risk
factors on time to phlebitis- and nonphlebitis-related failure when peripheral venous
catheters were replaced as clinically indicated. The Journal of Vascular Access. May 26th.