

**Efficacy of Sterile Dressing in the Prevention of of
Peripheral Intravenous Catheters Associated Phlebitis in
Patients from Western Brazilian Amazon: Pragmatic,
Randomized, Blinded and Controlled Trail**

ID: 2198630

6th July, 2020

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Introduction: Peripheral venous catheterization is the most commonly performed invasive procedure in healthcare. Care practices and the use of technologies may influence the results of the use peripheral intravenous catheters (PIC), contributing to the reduction of complications and adverse events. Phlebitis is characterized as one of the most serious complication related to the use of PIC and this study has as hypothesis to analyze if the occurrence of phlebitis associated with PIC is influenced by the use of sterile dressing.

Objectives: To verify the effect of using sterile dressing and sterile adhesive tape compared to non-sterile adhesive tape in PIC on the occurrence of phlebitis in adult patients attended at a hospital from the Western Brazilian Amazon.

Methods: Pragmatic, randomized, controlled and single-blinded clinical study conducted in Rio Branco, Acre. The sample was calculated in 330 patients, aged 18 years or older and who met the inclusion criteria. Data collection took place between June 2018 and September 2019, after approval of ethical merit. To identify the type of sterile transparent dressing to be studied, was carried out an implementation study with a final sample of 71 patients, focusing analysis from the perspective of the patient, professional and clinics. The patients of the clinical study were randomly allocated to one of the study groups: Experimental group (sterile transparent dressing) or Standard Group (non-sterile adhesive tape). Phlebitis was diagnosed by the bedside nurse, according to presence and severity. If present, the nurse removed the CIP and an external evaluator was called to perform a diagnose of phlebitis with blindness regarding the intervention. Variables related to patient characterization, intravenous therapy, peripheral venipuncture, reasons for withdrawal and length of PIC stay, reasons for removal and length of coverage, and associated complications were investigated. For the statistical analysis, Chi-square, Fisher's Exact, student t test, and Mann-Whitney U tests were used. The multiple analysis was performed using the logistic regression model to estimate the

Relative Risk (RR) and the Kaplan-Meier model, Cox regression, for survival analysis. RR calculation for 95% Confidence Interval (IC) was applied to estimate the degree of association between variables. In all tests, a significance level of 5% was considered.

Result: The clinical study was carried out with 306 patients, 153 in each study group (24 follow-up losses), the majority being female (52.3%), with an average of 47.22(\pm 16.1) years of age, with brown skin color (68.3%) and 51% had chronic diseases. Phlebitis was identified in 24.2% of the patients, with a difference between the study groups ($p < 0.0001$). Using non-sterile tapes increased the chance of developing phlebitis by 5.958 times compared to patients who received sterile dressing ($p = 0.0001$; 95% CI; 13.09-10.78). The average survival rate for PICs using sterile dressing was 5.387 times greater than catheters with non-sterile adhesive tape for stabilization ($p = 0.0001$).

Conclusion: The use of sterile dressing was significantly effective in reducing phlebitis and other complications related to PIC, and longer catheter dwell time, when compared to the use of non-sterile adhesive tape.

