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Effect of Replacement of Peripheral Venous Catheters at 96-Hour Intervals: A Database Analysis

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Abstract

Purpose: To compare the effect of replacement of peripheral venous catheters at 96-hour intervals on the incidence of phlebitis with that at 72-hour intervals through analysis of an incident-reporting database.

Methods: Convenience sampling of records from the incident-reporting database of a medical center in southern Taiwan was used to analyze the incidence of phlebitis among hospitalized patients with replacement of peripheral venous catheters at 72-hour intervals (from September 1, 2011, to August 31, 2014) or 96-hour intervals (from September 1, 2014, to August 31, 2017).

Result: The analysis revealed that replacing peripheral venous catheters every 96 hours rather than every 72 hours did not increase the incidence of phlebitis. The total incidence of phlebitis (odds ratio [OR]=0.70, $p=.0290$) and the incidence of bacterial phlebitis (OR=0.11, $p=.0097$) decreased significantly, and no significant differences in the incidence rates of chemical or mechanical phlebitis were identified.

Conclusion: According to the analysis results of a local database, under the humid tropical insular climate of Taiwan, replacement of peripheral venous catheters at 96-hour intervals did not significantly increase the risk of phlebitis in patients who exhibited no symptoms of phlebitis as assessed in three shifts. Medical institutions can adjust their clinical operation standards and implement knowledge translation accordingly.

Keywords: peripheral intravenous catheters, replacement, phlebitis, database analysis

96小時重置周邊靜脈導管之效應：資料庫分析

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摘要

目的：透過異常通報資料庫分析，探討96小時對照72小時重置周邊靜脈導管，對於靜脈炎發生率之影響。

方法：方便取樣臺灣南部某醫學中心之異常通報資料庫，分析2011年9月1日至2014年8月31日之72小時重置組，與2014年9月1日至2017年8月31日之96小時重置組，2個時期之住院個案的靜脈炎發生率。

結果：96小時對照72小時重置周邊靜脈導管，並未增加靜脈炎發生率。靜脈炎總發生率（勝算比[odds ratio, OR] = 0.70, $p=.0290$ ）與細菌性靜脈炎發生率($OR=0.11$, $p=.0097$)顯著減少，化學性與機械性靜脈炎發生率則無顯著差異。

結論：本土性資料庫分析結果為在臺灣熱帶海島型潮濕氣候，三班評估無靜脈炎症狀下，96小時重置周邊靜脈導管並不會顯著增加靜脈炎風險，建議醫療機構可據此調整臨床作業規範，落實實證知識轉譯。

關鍵詞：周邊靜脈導管、重置、靜脈炎、資料庫分析