The aim of this paper is to synthesize evidence on the effectiveness of PIVC insertion and maintenance bundles on preventing adverse events” Ray-Barruel et al (2019).

Abstract:

BACKGROUND: Evidence-based bundles have reduced central line bloodstream infection rates in adult intensive care units. To tackle peripheral intravenous catheter (PIVC) bloodstream infection, many hospitals have implemented PIVC insertion and maintenance bundles. However, the efficacy of PIVC bundles in preventing PIVC complications and infection in hospital patients is uncertain. The aim of this paper is to synthesize evidence on the effectiveness of PIVC insertion and maintenance bundles on preventing adverse events.

METHODS: In this systematic review, we searched multiple electronic databases, trial registries, and grey literature for eligible studies published in English (January 2000-December 2018) to identify intervention studies evaluating PIVC insertion or maintenance bundles with two or more components. Search terms: peripheral intravenous catheter/cannula, insertion, maintenance, bundle, infection, infiltration, extravasation, dislodgement, thrombosis, occlusion, and phlebitis. Two reviewers independently conducted data extraction and quality assessments using the Downs and Black checklist.

RESULTS: Of 14,456 records screened, 13 studies (6 interrupted time-series, 7 before-and-after) were included. Insertion and maintenance bundles included multiple components (2-7 items per bundle). Despite testing different bundles, 12 studies reported reductions in phlebitis and bloodstream infection, and one study reported no change in bloodstream infection and an increase in phlebitis rate. Methodological quality of all studies ranked between ‘low’ and ‘fair’.

CONCLUSIONS: The effect of PIVC bundles on PIVC complications and bloodstream infection rates remains uncertain. Standardisation of bundle components and more rigorous studies are needed.

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