“Significantly fewer patients required unplanned reinsertion with the CICS. The results suggest that the longer survival rate for the CICS can offset the higher initial catheterization costs.” Tamura et al (2014).

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Reference:


Abstract:

Purpose: To evaluate the clinical usefulness of an integrated closed intravenous catheter system (CICS) with a preattached stabilization platform and extension tube (BD Nexiva™; Becton, Dickinson and Company) in Japanese patients.

Methods: In this open, single-center study, patients who required peripheral intravenous (PIV) catheterization for ≥72 hours were quasi-randomized to receive a CICS or a conventional
intravenous catheter. Study outcomes included adverse events during catheter insertion, catheter replacements during the initial 72 hours, catheter survival rate at 72 hours after insertion and costs of initial catheterization and catheter replacement.

Results: Of 359 patients enrolled, 194 received the CICS and 165 received the conventional catheter. The incidence rates of ≥1 failed insertion attempts, blood leakage and blood exposure were similar in both groups. The survival rate of the CICS group (83.7%) was significantly higher than that of the conventional catheter group (62.6%) in the intention-to-treat analysis (p=0.0085). There were significantly fewer catheter replacements due to catheter-related complications (e.g., catheter failure or extravasation) in the CICS group (p=0.0056). Although the initial cost per patient was greater for the CICS group (US$17.07 vs. US$13.26), the total cost per patient over 72 hours was similar (US$21.00 vs. US$20.30) because of the cost of unplanned replacements of conventional catheters.

Conclusions: Although rates of adverse events at insertion were similar for both catheters, significantly fewer patients required unplanned reinsertion with the CICS. The results suggest that the longer survival rate for the CICS can offset the higher initial catheterization costs.

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