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Study of Introcan[®] Safety[™] IV Catheter (IVC) (B. Braun Medical Inc.) for the Prevention of Percutaneous Injuries (PIs) in Healthcare Workers (HCWs)

Meryl H. Mendelson, MD¹
B.Y. Lin-Chen, MPH¹
L.E. Finkelstein-Blond, MA, RN, CIC¹
G. Kogan, MS¹
I. Hollinger, MD²

¹Infectious Diseases, Mount Sinai School of Medicine, New York, NY, USA

²Anesthesiology, Mount Sinai School of Medicine, New York, NY, USA

BACKGROUND:

PIs due to hollow-bore needles for IV access are responsible for transmission of blood-borne pathogens to HCWs. Although safety IVCs have been demonstrated to reduce injuries, replacement of non-safety with safety IVCs is not complete and PIs continue to occur with non-safety IVC stylets.

OBJECTIVES:

Evaluate Introcan[®] Safety[™] IVCs for reduction in IV stylet PIs.

METHODS:

A before and after trial of IVC stylet injuries over 44 mos. (36 mos. baseline, 2 mos. training/pilot and 6 mos. study) in selected areas (ORs, post-anesthesia care units, neonatal and pediatric ICUs-NICU, PICU). Although a safety IVC was utilized in the remainder of the hospital, HCWs in these areas did not choose to utilize previously available safety IVCs due to issues related to the size of safety mechanism and flashback visibility. A safety IVC (Introcan[®] Safety[™]) was used for intravenous and arterial line insertions during this evaluation.

RESULTS:

During the baseline period (1/99-12/01, 36 months) there were 13 non-safety IVC stylet injuries and 255,900 IVCs utilized (IR-injury rate 5.08 per 100,000). 6 injuries were sustained by OR, and 7 by ICU (4 NICU, 3 PICU) staff. 5 occurred during use, 6 after use, before disposal and 3 during or after disposal. During the study period there were no safety IVC stylet injuries (IR- 0/87,000: p=0.07). One injury occurred with the Introcan[®] Safety[™] IVC during the post-study period due to non withdrawal of the stylet from the IVC following an unsuccessful insertion. A product evaluation survey completed by 59 HCWs (23 RNs, 36 MDs) showed 63% completely comfortable with the study IVC by the 10th IV insertion, 49% felt it was easy or very easy to use and 80% noted a change in technique was necessary.

CONCLUSIONS:

Although a variety of safety IVCs are currently available, applicability for either intravenous or intra-arterial insertions and ease of use during insertions in certain patient populations may be device and patient type specific. There was a trend towards significance in reducing injuries with the Introcan[®] Safety[™]. Withdrawal of the stylet from this safety IVC is necessary for protection against PIs.