Clinical acceptability and ease of use of a safety intravenous (IV) catheter system

Abstract:

Objective: Occupational risk of transmission of bloodborne pathogens represents a major challenge in prevention. Even though preventive recommendations to avoid needlestick injuries among healthcare workers include the use of needle protective devices, its use in developing countries is not a standard practice. This study aimed to measure, on experienced nurses, perception of performance characteristics and activation of the safety feature of a safety closed IV catheter system (BD Pegasus 1), called catheter (P), versus a non-safety device (BD Intima II 2) called catheter (I) in healthy volunteers. 1 BD Pegasus is a registered trade name of Beckton Dickinson Medical, Franklin Lakes, New Jersey, USA 2 BD Intima II is a registered trade name of Beckton Dickinson Medical, Franklin Lakes, New Jersey, USA.

Method: 52 nurses and 205 healthy volunteers participated in a prospective, randomized, controlled study in a simulated setting. Each nurse performed two insertions of each catheter (one in each forearm) in four study volunteers; the order of insertions was randomly assigned. Statistical analyses were performed to compare the performance of the two catheters regarding Overall Perception of Clinical Acceptability and Ease of Use.

Results: Overall acceptance of the device performance characteristics was 90% or more. In
all cases, catheter (P) performed at least as well as catheter (I). There were no differences in the insertion success rate between the two devices” (93.7% vs. 96.2%). Activation of the safety feature of catheter (P) occurred 99.4%. Subjects’ perception of pain was similar for both devices. Overall perception of clinical acceptability and ease of use were judged better for catheter (P) than for catheter (I) (p= 0.006, and p < 0.001 respectively). All clinicians strongly agreed that catheter (P) would protect them from needle stick injuries.

Conclusions: Despite the study limitations, mainly its artificial setting and its inability to blind, the results indicate that the Safety Closed IV Catheter System with its safety feature represents a good alternative for IV catheter insertions that can help reduce the incidence of stick injuries in health care workers.