Nondisposable Blood Pressure Cuffs as a Potential Source for Cross Contamination

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Abstract:
Background: Methicillin-resistant Staphylococcus aureus (MRSA). Staphylococcus aureus and Vancomycin-resistant Enterococci (VRE) are capable of surviving for days to weeks on environmental surfaces. Some healthcare facilities have implemented the use of disposable blood pressure cuffs in an effort to prevent cross-contamination of multidrug-resistant organisms, which can add substantial costs. A prospective study was conducted in June 2008 to evaluate the level of bacterial contamination on 30 BP cuffs and 8 pneumatic tourniquets used in surgical procedures that require the temporary occlusion of blood flow in the extremity. An infection control measure was implemented to disinfect the equipment with an quaternary/isopropyl alcohol germicidal surface wipe.

Objective: To evaluate the effectiveness of a surface cleaning procedure for the decontamination of BP cuffs and tourniquets prior to each patient use.

Methods: Contact plates were applied to the center portion of the BP cuff and pneumatic tourniquet that touches the patient’s skin during use. The colony forming units (cfu) were recorded, as well as the identification of the microorganisms that were found on the equipment.

Results: There was one BP cuff (3.3%) which grew Staphylococcus aureus. None had MRSA and VRE. Four of the 8 tourniquets grew <9 cfu and 9 of the 30 BP cuffs (30%) grew <10 cfu of bacillus species or Coagulase negative staph.

Discussion: Significant bacterial colonization may occur on surfaces of nondisposable blood-pressure cuffs. Contamination of blood-pressure cuffs can be particularly problematic in intensive care units and operating rooms, where the cuffs are commonly exposed to blood and other bodily fluids, thus making the cuffs a possible source of infection if reused. With the increasing recognition that contamination of blood-pressure cuff can be a source of infection, it has been recommended that, where possible, a sterilized cuff, or an unused disposable cuff, be dedicated to each patient. However, dedicating a cuff to each patient requires a large number of cuffs, thereby making the practice expensive. Moreover, it is procedurally difficult to ensure that the cuff follows the patient's movements in the hospital. Disposable cuffs are available as a possible solution, but disposable cuffs also lead to substantial additional expense.

Conclusions: A surface cleaning with germicidal cloths that are active against Staphylococcus aureus, MRSA and VRE on nondisposable BP cuffs and pneumatic tourniquets appears sufficient to reduce contamination to safe levels between patient use. The cleaning procedure should be done just before each use to prevent cross contamination from shared equipment.

References: