

Investigating the Impact of the Laundry and Sterilization Process on the Performance of Reusable Surgical Gowns

Authors : N. Khomarloo, F. Mousazadegan, M. Latifi, N. Hemmatinejad

Abstract : Recently, the utilization of reusable surgical gowns in order to decrease costs, environmental protection and enhance surgeon's comfort is considered. One of the concerns in applying this kind of medical protective clothing is reduction of their resistance to bacterial penetration especially in wet state, after repeated laundering and sterilizing process. The purpose of this study is to investigate the effect of the laundering and sterilizing process on the reusable surgical gown's resistance against bacterial wet penetration. To this end, penetration of *Staphylococcus aureus* bacteria in wet state after 70 washing and sterilizing cycles was evaluated on the two single-layer and three-layer reusable gowns. The outcomes reveal that up to 20 laundering and sterilizing cycles, protective property of samples improves due to fabric shrinkage, after that because of the fabric's construction opening, the bacterial penetration increase. However, the three-layer gown presents higher protective performance comparing to the single-layer one.

Keywords : laundry, porosity, reusable surgical gown, sterilization, wet bacterial penetration

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