

The Automated Proper Sequence of Washing Treatments

Study Results: The proper sequence of washing treatments rendered surgical instruments and utensils that tested as sterile at the completion of the cleaning process.

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The application of universal precautions to instruments/utensils handling became an issue in the selection of replacement decontamination equipment for Central Sterile supply at our hospital. The new technology of an automated Surgical Instrument Washer Decontaminator, used with a combination enzyme detergent lubricating cleaner, offered increased protection to our reprocessing staff due to decreased handling but raised concerns about the efficacy of thermal disinfection as opposed to the traditional washer sterilization.

Because of the limited scientific documentation pursuant to the efficacy of surgical instrument washers, a study was undertaken to establish the microbial safety of finished products and to identify any feature or function failure which could adversely affect the washing outcomes.

The sequential functions of the Surgical Instrument Washer Decontaminator progress from flush/rinse enzyme cold water washing, elevated temperature detergent washing, redundant rinses, lubrication with deionized water (DI) sprays, and to drying at 240° F, for 4 minutes. The Washer Decontaminator was challenged with selected instruments and utensils that are considered to be very difficult to clean. Included were 30 each of stainless steel non-perforating towel clips and stainless steel and glass medicine cups. Each item was rinsed (contaminated) with a 105 ml suspension of *Staphylococcus aureus*, *Pseudomonas aeruginosa*, *Enterococcus fecalis* and *Candida albicans*, in nutrient media, and then dried. The instruments were processed in the Washer Decontaminator, in 3 separate loads during times of high volume SPD operation. All products were tested for sterility. Ten separate cultures were taken of the final rinse solution of instrument lubricant and de-ionized water prior to the drying cycle. A separate culture was taken of the instrument lubricant fluid.

All instruments and utensils tested were sterile at the completion of the cleaning process. The Surgical Instrument Washer Decontaminator using the proper sequence of treatments, and a combination enzyme detergent lubricating cleaning concentrate, is a valid replacement for the conventional Washer Sterilizer.

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