Immediate re-use of endoscopes after reprocessing: is there any safe time frame? Preliminary microbiological data

Rivara C. (1), Cordioli D. (2), Festa E. (3); (1) Gastroenterology and Endoscopy Unit ASL Torino 4, (2) Surgical Department ULSS 22 Veneto, (3) Gastroenterology and Endoscopy Unit USL Valle d’Aosta, Italy

Background The main guidelines on cleaning and disinfection of flexible endoscopes for the gastrointestinal tract give two choices at the end of reprocessing: the immediate re-use of the instrument on the next patient or its storage in special dedicated cabinets. This second option is currently well defined and described, also thanks to the recent publication of a European Norm (EN 16442:2015), and instead there is no temporal definition of what is meant by “immediate” re-use of the endoscope after reprocessing.

Aims To evaluate the presence or absence of microorganisms on internal and external surfaces of reprocessed endoscopes before their re-use in the same daily session, after a limited period of time without storage in dedicated cabinets.

Methods From June to September 2015 samples for microbiological examination were taken as follows: 200 samples by flushing 20 cc of sterile saline solution into the biopsy channel; 200 samples by swabbing the external flexible part of the endoscope with a sterile swab. Analyzed endoscopes were colonoscopes (n=96), gastroscopes (n=88), and duodenoscopes (n=16). All instruments were manually cleaned and then automatically reprocessed in a washer disinfector compliant to EN ISO 15883-4. At the end of the cycle in the washer-disinfector each endoscope was dried with filtered compressed air and housed horizontally in suitable trays covered with a low lint towel. Sampling of internal and external surfaces were performed just before the re-use of the instrument in the endoscopy room. For each sample the time elapsed between the output of the endoscope from the washer disinfector and the output from the tray for the re-use was registered (re-use time).

Results. All of the 200 samples of the rinsing water from the biopsy channel were negative (< 20 CFU, no indicator germs). Bacilli and coagulase negative staphylococci were isolated in 20 out of 200 samples from swabbing of external surfaces (13 from colonoscopes, 7 from gastroscopes). Total average time of re-use was 71 ± 50 minutes, with a minimum time of 5 minutes and a maximum time of 200 minutes; according to the type of endoscope re-use average time was 61 ± 41 minutes (min 5–max 170) for colonoscopes, 79 ± 57 minutes (min 5–max 200) for gastroscopes, and 89 ± 48 minutes (min 40–max 150) for duodenoscopes.

Discussion and conclusions Bacterial species isolated from samples of external surfaces lead to hypothesize a recontamination of the instruments caused by inadequate handling after cleaning and disinfection. Overall results indicate that when reprocessing is performed in agreement with the state of the art defined by the guidelines, in a suitable environment, and following a clear dirt to clean path, flexible endoscopes can be safely re-used, after manual drying and without storage in special dedicated cabinets, within a maximum period slightly greater than 3 hours. This time frame is almost coincident with the current guidance of the British Society of Gastroenterology which recommends to reprocess endoscopes before re-use if more than 3 hours have elapsed since the previous disinfection procedure, unless they are stored in cabinets with a constant flow of clean air through all lumens to keep them dry. Proper drying of surfaces is essential to minimize bacterial re-growth, especially of the so called water-borne bacteria (e.g. Pseudomonas) which may rapidly proliferate in moisture.

References