Guide lines

Guidelines on Cleaning and Disinfection in GI Endoscopy As recommended by European Society of G.I.E. 1999

Introduction:

These guidelines are prepared and revised by the directorate of the Gastrointestinal disease center / Ministry of Health, BAGHDAD, IRAQ.

These are currently followed by the G.I.T Center and were recommended to be used in all endoscopic centers in Iraq according to the protocol suggested by the European Society of Gastrointerology Endoscopy (E.S.G.E.) updated 1999.

Patients undergoing digestive endoscopy should be examined and treated with out risk of transmission of infection or side effects that may result from inadequately reprocessed endoscopic equipment (e.g harm from residual chemicals on inadequately rinsed accessories).

The aim of these Guidelines is to set standards for the reprocessing of endoscopes and endoscopic devices prior to each individual procedure; whether performed in hospitals, private clinics or doctor's office.

Specially trained staff in a purpose-designed environment should carry out all reprocessing. It is the responsibility of the healthcare provider to ensure that adequate facilities for reprocessing are available. Regular quality control and the institution's adherence to validated reprocessing procedures is the responsibility of both endoscopists and healthcare providers and should be monitored by the hospital based hygiene / cross-infection control department or an external organizations.

Endoscopy-Related Infections:

Micro-organisms may be spread by inadequately reprocessed equipment from one patient to another, or from patients to staff members. Bacterial infections have been acquired during endoscopy, such as Salmonella and Pseudomonas. Viral diseases such as hepatitis B and hepatitis C have also been transmitted during endoscopy.

Patients with immune deficiency syndromes or severe neutropenia and those undergoing immunosuppressive chemotherapy or who have artificial cardiac valves have an increased risk of infection.

Diagnostic endoscopic retrograde cholangiopancreatography and all therapeutic procedures carry a higher risk of infection. Patients harbouring clinically latent infections (hepatitis, HIV, TB, Salmonella, Helicobacter pylori) may not be aware of their carrier status, and therefore, all patients should be considered a potential risk.

Hazards to Endoscopic personnel

Micro-organisms may be transmitted from the patient to endoscopes personnel so protection from direct contact with the endoscopes and accessories is essential, Gloves and aprons should be worn and protective masks and eye protection should be available to avoid exposure to blood or body fluids.

Protection against chemicals used in cleaning disinfection procedures is of utmost importance in order to avoid toxic and allergic reactions. Separate purpose- designed rooms for cleaning and disinfection must be well ventilated and disinfectants should be used within a closed system.

Staff known to be disease carries should avoid duties that could transmit their disease to patients. It is recommended that all staff be offered vaccination against type B hepatitis.

Today enodoscopic procedures have become an important tool in the diagnosis and treatment of gastrointestinal diseases. In recent years the risk of infection has increased due to the

increasingly invasive nature of the procedures. Moreover, more and more elderly people, patients with multiple diseases and patients with immune system deficiencies are being endoscoped than ever before. In order to prevent cross infections endoscopic control of infection measures have become increasingly important for both patients and the endoscopy staff. Therefore, safe equipment reprocessing and careful maintenance of endoscopic equipment are the basis for an efficient prevention of infections programme in endoscopy.

During the last 10 years, the reprocessing of flexible endoscopes has become more and more standardized, facilitated by the increasing number of protocols that have been established for manual and automated cleaning and disinfection. Although there has been a more or less standardized disinfection protocol for endoscopey reprocessing this has not been the case for endoscopic accessories, as different European membership countries permit a variety of reprocessing methods. Moreover, endoscopic accessories penetrating tissue require more stringent standards for reprocessing than endoscopes. Case reports about cross infections caused by inadequately cleaned and disinfected endoscopic accessories have highlighted the need for a standardized reprocessing protocol for endoscopic accessories.

Definitions

Endoscopic accessories:

All devices used in conjunction with an endoscope to perform diagnosis and therapy, excluding peripheral equipment.

Cleaning:

Removal of blood, secretions and debris from endoscopes and accessories.

Disinfection:

Reduction of the number of viable micro-organisms on a device to level appropriate for safe use on a patient, where sterilization of the device is not necessary. Disinfection may also be undertaken as a preliminary step to sterilization, if necessary. Disinfection should be carried out immediately after cleaning and immediately prior to use .

Sterilization:

Validated process used to render a device free from all forms of viable microorganisms.

Single-use accessories:

Also called "disposable", these are provided in a sterile state ready for use. The opening of a sterile package implies immediate use, as is routine in surgery.

After a single-use device has been used, all materials should be properly disposed of. Under no circumstances should a single-use device be reused.

Reusable accessories:

Reusable accessories should be sterilized. The sterilization is carried out after proper cleaning, as detailed below. Manufactures provide validated standard reprocessing parameters (temperature and time) for cleaning, disinfection and sterilization.

The risk of cross-infection may vary, depending on the procedure. We recommend the following procedures:

1. Gastrointestinal procedures:

Wherever possible, the device used should be sterile; whether it is a single-use device and provided in a sterile state by the manufacture, or a reusable one that has been sterilized (e.g. in biopsy forceps, polypectomy snares). If it is not technically possible to achieve sterilization (e.g. in the case of balloons or bougie dilators), the device should be subjected to disinfection.

2. Biliary and pancreatic procedures:

All accessories used should be sterile. Reusable devices should be sterilisable. Balloons cannot be sterilized for technical reasons. The use of reprocessed (i.e. disinfected) balloons carries a risk of serious contamination of the biliary or pancreatic duct system, or both.

3.Injection Needles:

Injection needles should be used once only. The European Society of Gastrointestinal Endoscopy recommends the use of disposable needles for several reasons: there is a danger to endoscopic personnel in dismantling needles, their narrow lumen is difficult to clean, they are likely to be contaminated with blood; and the type of patients in whom they are used, are often infectious.

4. Prostheses:

Prostheses should be used as recommended by the manufacturer.

Protocol for Reprocessing Endoscopy Accessories

I. Endoscopic Reprocessing:

We recommend the use of fully automatic washer-disinfectors. Alternatively a rigorous manual procedure must be employed. Before starting commencing with the reprocessing of endoscopes and endoscopy accessories, protective clothing must be put on (as appropriate: protective gloves, glasses / visor, face masks. Aprons/ examination coats) and splashing avoided during the following cleaning and disinfection procedures in order to avoid contact with infectious material and disinfectants or detergents.

Manual Cleaning

1. As soon as the endoscope is removed from the patient, the air/water channel must be flushed for 10-15 seconds to eject refluxed blood or mucus. Detergents solution should be aspirated through the suction / biopsy channel to remove secretions and debris.
2. The endoscope should be immersed in water and detergent and cleaned externally. The outside of the instrument is washed with disposable sponges or swabs. The distal end is brushed with a soft toothbrush and special attention is paid to the air/water outlet nozzle and the bridge/ elevator where fitted. All valves are removed and washed. The biopsy channel opening and the suction port should be cleaned with a cotton bud.
3. Brushing through the suction/instrument channel and all accessible channels must be performed using a cleaning brush designed for that instrument. The brush must be passed through the channel several times until clean, and the brush itself must be cleaned in detergents with a soft toothbrush each time it emerges. First the instrument channel is cleaned by brushing at least three times, cleaning the brush between each brushing. Thereafter, pass the cleaning brush through the suction port and down the insertion tube until it emerges from the distal end at least three times, cleaning the brush each time as above. Then pass the cleaning brush from the suction port through the umbilical cord of the endoscope until it emerges from the suction connector at least three times, as above.
4. Rinse all the channels by flushing with water followed by air to expel as much air as. possible prior to disinfection.

A THOROUGH CLEANING OF THE ENDOSCOPE IS A PREREQUISITE FOR PROPER DISINFECTION (MANUAL OR AUTOMATIC)

II. Endoscopic Disinfection:

1. Manual Disinfection:

A. Disinfection must be carried out in a separate room with proper ventilation. Protective gloves, eye protection and aprons must be used and splashing avoided. The instrument should be fully immersed in 2% glutaraldehyde or other chemical disinfectant of equal potency. All channels must be filled with disinfectant and soaked for not less than 10 minutes.

B. Rinsing of the instrument with water must be undertaken after disinfection, internally and externally, to remove all traces of disinfectant. The water must have drinking water quality and should be free of pathogens such as pseudomonas aeruginosa. If necessary, filtered water may be used for rinsing.

C. Dry the endoscope externally and flush each channel with air. Wipe the eye piece and light guide connector as well as the plugs before connecting the endoscope to the light source. Fit the disinfected and rinsed valves and activate air / water channel as well as the suction channel. The endoscope is now ready for use again.

DISINFECTION OF THE ENDOSCOPES SHOULD BE PERFORMED BEFORE EACH SESSION AND BETWEEN PROCEDURES.

2. Washer-disinfectors:

After a manual cleaning as described above, the endoscope may be disinfected automatically according to specification, attention being paid to temperature, flushing of all channels of the endoscope followed by a cleaning and a drying procedure. The duration of these reprocessing programs is about 30 minutes.

III. Accessories

A. Cleaning

1. Dismantle as far as possible.
2. Wash in detergent immediately after use.
3. Brush with cleaning brush or toothbrush.
4. Flush detergent through all parts of lumens of hollow components.

5. Use an ultrasonic cleaner for all accessories.
6. Rinse thoroughly in water of drinking quality.

B. Sterilization

Sterilization can be achieved by steam autoclaving as per the manufacture's recommendations. Failure to follow the manufacture's recommendations may compromise sterility or the integrity of the device. Sterilization can also be achieved with ethylene oxide, although this procedure is time-consuming and not readily available.

C. Storage

Sterile devices should be stored in individual packing. All non - sterilisable accessories should be disinfected immediately prior to use.

Care of Accessories and Instruments

Great care should be taken to avoid the use of defective or damaged accessories (e.g. biopsy forceps with kinks on the shaft) because such instruments may not operate properly and may also damage the endoscope's instrument channel, causing both hygienic and mechanical problems, with a consequent risk of incomplete reprocessing and even of serious damage to the endoscope itself.

Comment

Due to their nature, endoscopic accessory devices are not designed for repair in the event of breakage. The European Society of Gastrointestinal Endoscopy does not recommend their repair, since the original properties may be altered with consequent risks to patients and danger of damage to endoscopes.

These guidelines draw attention to the necessity of increasing the number of endoscopic devices in each endoscopic suite, in order to ensure adequate availability, taking into account the reprocessing time required. The implementation of these guidelines does therefore have economic implications, increasing the cost of endoscopic procedures, but it is necessary in order to protect both patients and endoscopy personnel.