OPERATIONAL CIRCULAR

Subject: PREVENTION OF CROSS INFECTION IN DIAGNOSTIC ULTRASOUND

BACKGROUND

Studies have shown that there is some risk of bacterial transmission during ultrasound examination procedures. The risk is significantly increased with the use of intracavity transducers and/or where blood and body fluids are encountered (in accord with DOHWA recommendation "Guidelines for Infection Control in Non Teaching Health Care Establishments" - Section Two). To prevent or minimise the risk of infection, Standard Precautions should be adhered to at all times when patient care is provided. Every patient is regarded as a potential source of infection and therefore scrupulous cleaning of equipment after use is essential. This should be followed by disinfection with a registered high level disinfectant or sterilisation where appropriate.

Caution

Ultrasound transducer users must verify that the cleaning and processing procedures are in compliance with warranty requirements of the manufacturer.

GUIDELINES

1. TRANSABDOMINAL ULTRASOUND

   To minimise cross infection the following is recommended:

1.1 Hand hygiene

   Hand hygiene is the single most important means of preventing the spread of infection. This should be performed before and after patient contact.

1.2 Cleaning of the ultrasound transducer

   After each use, remove coupling gel from probe by wiping with a soft cloth and rinse with flowing water.

   Wash the probe with surface in lukewarm water and mild detergent with a soft sponge, gauze or cloth, removing all visible residue. Do not use harsh detergents or abrasive cleaners.

   Rinse thoroughly in flowing water to remove all detergent residues. Air dry or with a soft cloth.
1.3 Patients with wounds and/or abrasions

A disposable transducer cover should be used. After use, follow point 1.2. In event of blood or bodily fluid contamination, the protocol for probes used for intracavity ultrasound applies.

2. INTRACAVITY ULTRASOUND

In general, intracavity ultrasound poses an increased risk of cross-infection compared to transabdominal scanning. The following scanning procedures carry significant risk of cross infection due to contact with mucous membranes or other potentially contaminated sites eg wounds, body cavities.

- Transvaginal
- Transrectal
- Intracavity and wound
- Transoesophageal

To minimise cross infection the following is recommended:

2.1 Hand hygiene

Hand hygiene is the single most important means of preventing the spread of infection. Disposable gloves must be worn by the Sonographer, and the hand in contact with the patient should not contaminate the ultrasound machine panel or probe cable.

2.2 Covering the transducer

The transducer must be covered before insertion. Purpose made lubricated sheathes are commercially available. Another option is a surgical drape of polythene water repellent sheeting 38 microns thick, which can be purchased as a larger sheet and therefore utilised to more adequately cover the transducer (Australian Society for Ultrasound in Medicine - “Guidelines for Disinfection of Transvaginal Transducers”). Alternately a condom can be used, or a vinyl glove in patients with latex sensitivities. Cling food wrap or similar materials must not be used.

The transducer drape should fully cover the probe, minimising the risk of possible rupture by over stretching.

2.3 On Completion

On completion of an ultrasound examination, all gel and extraneous material should be removed from the transducer. The transducer should be cleared under running water and detergent. A hospital grade detergent solution is appropriate. Wipe the transducer dry.

In cases of heavy blood or tissue loss (eg during menses or prostate biopsies), enzymatic solutions can be used to aid removal of proteinaceous material prior to disinfection. A small fine cleaning brush can be used to thoroughly clean the transducer surface being careful to avoid the elements at the probe face.
2.4 Disinfection of the intracavity ultrasound transducer

All solutions used must be a registered and labelled instrument grade high level disinfectant.

2.4.1 Orthophthalaldehyde (OPA)

The cleaned transducer is soaked (taking care to avoid electrical connections and cables being immersed) in a commercially available OPA solution for 10 minutes followed by rinsing under tap water and drying. The use of OPA requires the wearer to don personal protective equipment. If adequate air circulation is not available, a fume cabinet may be necessary. Refer to Manufacturers instructions for possible contraindications for use.

2.4.2 Glutaraldehyde

The cleaned transducer is soaked (taking care to avoid electrical connections and cables being immersed) in a commercially available 2% glutaraldehyde solution for 20 minutes followed by rinsing under tap water then drying. The use of glutaraldehyde requires the wearer to don personal protective equipment and use a fume cabinet for disinfection of probes. (In accordance with DOHWA policy OP 224/92).

Both OPA and glutaraldehyde have bacterial, fungicidal and virocidal activity.

NOTE:

Hospitals who wish to continue using glutaraldehyde to disinfect diagnostic ultrasound probes will require a purpose built fume removal cabinet.

[Purchase of cabinets will be the responsibility of the Health Service concerned.]

REFERENCES


Dr Shirley Bowen
DIRECTOR
COMMUNICABLE DISEASE CONTROL DIRECTORATE