Skin Antisepsis

The following guideline indicates the solutions to be used when preparing skin for invasive procedures.

Principles

1. always consider whether the procedure is justified
2. always choose the recommended solution for the procedure (table below)
3. clean skin thoroughly but gently: even gentle rubbing on the most immature skin may remove the epidermis
4. avoid pooling of any antiseptic agent- pooling is associated with severe skin burns in the most immature infants particularly when agent contains alcohol. See below.
5. monitor skin integrity following procedure and report any concern immediately to senior staff

Safety

Burns related to prolonged contact of chlorhexidine/alcohol on skin of extreme preterm are well recognised. Photos show burns occurring after using alcohol preparation and failing to wash with saline (Fig 1) and where pooling has occurred during procedure (Fig 2)

Figure 1. Reynolds et al. Arch Dis Child Fetal Neonatal Ed. 2005 Jan;90(1):F10.
Figure 2. Lashkari et al. Arch Dis Child Fetal Neonatal Ed. 2012 Jan;97(1):F64

Ensure baby is NEVER lying in a pool of solution. This may result in a severe burn. Soaked material should be removed from under abdomen and replaced with dry swabs for the length of the procedure.

The use of chlorhexidine has been rarely associated with anaphylaxis. Although such reactions are extremely rare in newborns, please be alert to any severe reactions occurring in conjunction with chlorhexidine use and report immediately to senior staff. Such episodes should also be reported through the Datix system.

Specific Procedures

Refer to the table below and select the antisepsis appropriate for the planned procedure

Do not use alcohol-containing solutions in extreme preterm infants in first week of life

<table>
<tr><th>Who?</th><th colspan="2"><27w or <1kg</th><th>≥27w or ≥1kg</th><th>>34w</th></tr>
<tr><td></td><td><u>In</u> first week of life</td><td><u>After</u> first week of life</td><td></td><td></td></tr>
<tr><td>What?</td><td>Chlorhexidine Gluconate Solution 0.5% W/V</td><td colspan="2">Chlorhexidine Gluconate 0.5% W/V in 70% V/V DEB cutaneous solution (Prevase)</td><td>Chlorhexidine Gluconate 2% in 70% alcohol (Clinell wipes)

Chlorhexidine Gluconate 0.5% W/V in 70% V/V DEB cutaneous solution (Prevase)</td></tr>
<tr><td></td><td>  </td><td colspan="2">  </td><td>   </td></tr>
<tr><td>How?</td><td colspan="3">Allow skin to dry for 30-60 seconds, then wash with sterile water</td><td>Allow skin to dry for 30-60 seconds</td></tr>
<tr><td>When?</td><td colspan="3">Capillary heel prick
Venepuncture
Venous cannulation
Blood culture

Peripheral arterial cannulation
Umbilical arterial and venous lines
Percutaneous long lines

CFM needle electrode insertion
Lumbar puncture
Ventricular/VAD tap

Suprapubic aspiration
Chest drain</td><td>Capillary heel prick
Venepuncture
Venous cannulation
Blood culture

Peripheral arterial cannulation

CFM needle electrode insertion

Umbilical arterial and venous lines
Percutaneous long lines
Lumbar puncture
Ventricular/VAD tap
Suprapubic aspiration
Chest drain</td></tr>
</table>

When possible all clinical procedures should be carried out as a 2 person procedure (the second can be a parent/caregiver) with comfort measures being offered at all times to support neurodevelopment.

Umbilical arterial and venous lines/ Percutaneous long lines

These must be carried out as a 2 person procedure, which includes one observer; and both an aseptic checklist and line insertion document should be used.