Human Papilloma Virus and Ultrasound Transducers: Why take risk if you have options?

A new study shows that trophon® EPR is the first high level disinfection system for ultrasound probes proven to be effective against high-risk, cancer causing strains of Human Papilloma Virus (HPV).

Commonly used disinfectants do not kill high-risk HPV

Due to the difficulties of producing natural, infectious HPV for research, disinfectant efficacy testing against HPV has not previously been possible. This changed recently when the world’s first method to produce sufficient infectious HPV for research was developed, and the first HPV disinfectant efficacy study was published in 2014. The results showed that two disinfectants commonly used for high level disinfection in healthcare facilities, glutaraldehyde and ortho-phthalaldehyde (OPA) do not kill natural, infectious, high-risk HPV 16 – even after 24 hours of contact time.

Did you know?

Up to 7.5% of transvaginal ultrasound transducers were found to have HPV DNA after low level disinfection with wipes.

Human Papilloma Virus (HPV) is associated with 99.7% of cervical cancers as well as a number of other cancers including anal, vaginal, vulvar and penile.

Clinical studies have shown that 3-7% of endocavitary probes remain contaminated with high-risk HPV DNA after ultrasound exams and routine disinfection.

One of the TOP 5 non-compliance findings by The Joint Commission is reducing the risk of infections associated with medical devices or equipment.

Up to 9% of barrier sheaths and condoms leak.

trophon EPR
Simply smarter probe disinfection.

trophon EPR is a high level disinfection system that is fast and simple. Disinfection takes place in an automated, closed system and uses a vaporized hydrogen peroxide solution.

The compact design means it can be located at the point of care, helping to improve patient workflow, while the fully enclosed system helps protect both patients and staff by limiting exposure to harmful disinfectant chemicals.
Summary of Clinical Studies

SUSCEPTIBILITY OF NATIVE HPV16 TO DISINFECTANTS

<table>
<thead>
<tr>
<th>DISINFECTANT</th>
<th>45 MINUTES</th>
<th>RESULT</th>
<th>24 HOURS</th>
<th>COMPLETE INACTIVATION</th>
<th>VIRUCIDAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.4% GTA*</td>
<td>×</td>
<td>&lt;1 log₁₀</td>
<td>Not tested</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>3.4% GTA</td>
<td>×</td>
<td>&lt;1 log₁₀</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>0.55% OPA#</td>
<td>×</td>
<td>&lt;1 log₁₀</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>0.525% hypochlorite</td>
<td>✓</td>
<td>4.862 log₁₀</td>
<td>Not tested</td>
<td>×</td>
<td>✓</td>
</tr>
</tbody>
</table>

* Glutaraldehyde  # ortho-phthalaldehyde

In a further clinical study, surface carrier tests against HPV16 and HPV18 were carried out using OPA, hypochlorite and trophon EPR. The testing was conducted according to manufacturers’ instructions to simulate normal clinical use conditions (concentration, time, temperature) and met FDA requirements for virucidal testing.

OPA was shown to be ineffective against both HPV16 and HPV18. While hypochlorite was effective against both viruses, it is not a high level disinfectant and is not suitable for use with ultrasound probes. The trophon EPR achieved > 4 log₁₀ reduction and complete inactivation of both HPV16 and HPV18, meeting FDA requirements.

SUSCEPTIBILITY OF HPV16 AND HPV18 TO CLINICAL DISINFECTIONS USED ON ULTRASOUND PROBES

<table>
<thead>
<tr>
<th>DISINFECTANT</th>
<th>HPV16</th>
<th>HPV18</th>
<th>COMPLETE INACTIVATION</th>
<th>VIRUCIDAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.55% OPA#</td>
<td>&lt;1 log₁₀</td>
<td>&lt;1 log₁₀</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Hypochlorite (0.87%)</td>
<td>4.95 log₁₀</td>
<td>4.62 log₁₀</td>
<td>×</td>
<td>✓</td>
</tr>
<tr>
<td>trophon EPR (35% H₂O₂)</td>
<td>&gt;7.39 log₁₀</td>
<td>&gt;5.87 log₁₀</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

# ortho-phthalaldehyde

Imagination at work

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