The Efficacy of Alcohol Based Wipes, Gel, Foam, and Spray Compared to Liquid Soap in Eliminating Transient Hand Bacteria

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Background

♦ Hand hygiene is a proven method of preventing the spread of pathogens and reducing healthcare associated infections.

♦ Studies have shown that up to 50% of healthcare professionals’ (HCPs) hands were contaminated with the same pathogen as a patient with a confirmed multidrug resistant organism, such as MRSA or VRE, after exiting the room.

♦ The objective of this study was to compare the efficacy of alcohol based hand rubs and liquid soap at the removal of transient hand bacteria.

Methods

♦ Seventy-five healthy adults were randomly chosen to participate in one of the five hand hygiene tests.

♦ Moistened sterile swabs were used to rub the fingers, thumbs, and palms of both hands before and after hand hygiene.

♦ Volunteers performed one of the hand hygiene methods following WHO recommendations for hand washing and hand rubs while wipes were used by applying a pulling motion on fingers and thumbs followed by rubbing the palms.

♦ Swabs were agitated for 15 seconds in a peptone broth and poured onto Petrifilms for incubation of 48 hours at 37°C.

Results

♦ The percent reduction in transient hand bacteria using aerobic colony counts were enumerated and calculated as follows: 90% for wipes, 82% for liquid soap, 80% for gel, 72% for foam and 71% for spray.

♦ The wipes eliminated hand bacteria significantly better than the liquid soap (p = 0.0247) while the gel (p = 0.7239) and foam (p = 0.0661) showed no significance.

♦ The soap performed significantly better than the spray (p = 0.0182).

Conclusions

♦ This study demonstrated that alcohol based wipes performed better at removing transient bacteria from the hands than liquid soap and water.

♦ This result potentially provides another method for HCPs in reducing the risk of infection for their next patient and decreasing the likelihood of transmitting an infectious agent via hands.

♦ Alcohol wipes could also be used by patients as an alternative form of hand hygiene when hand washing facilities are not accessible.

<table>
<thead>
<tr>
<th>Method</th>
<th>Alcohol</th>
<th>Volume</th>
<th>Contact Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wipe</td>
<td>70% Ethanol</td>
<td>1.5 mL</td>
<td>30 sec</td>
</tr>
<tr>
<td>Soap</td>
<td>None</td>
<td>1.3 mL</td>
<td>20 sec</td>
</tr>
<tr>
<td>Gel</td>
<td>70% Ethanol</td>
<td>1.0 mL</td>
<td>20 sec</td>
</tr>
<tr>
<td>Foam</td>
<td>62% Ethanol</td>
<td>Golf ball size</td>
<td>25 sec</td>
</tr>
<tr>
<td>Spray</td>
<td>71% Ethanol</td>
<td>3.4 mL</td>
<td>30 sec</td>
</tr>
</tbody>
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