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Anti-microbial Effect of Product Biomist.
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The product was examined for its anti-microbial activity in order to confirm its disinfectant properties on different surfaces in a Magen David Adom ambulance that were inoculated with a bacterial suspension of the following microorganisms (to a final concentration of aprox. 10^4 org/ml each):

Escherichia coli ATCC 8739

Staphylococcus aureus MRSA 33591

Candida albicans ATCC 10231

Pseudomonas aeruginosa ATCC 9027

The microorganisms were grown on Tryptic Soy Agar Slants and suspended in phosphate buffer (pH 7.2) to a final concentration of ca 10^4 org/ml.

The bacterial suspension was dispersed on 4 different surfaces.

- 1) Patient bed- head pillow
- 2) armchair-paramedic
- 3) Medicine drawer
- 4) Driver steer wheel

The chosen surfaces were examined a) for their initial microbial load, b) after the contamination with the bacterial suspension and c) after the disinfection process.

Each surface was sampled by **Replicate Organism Direct Agar Contact plates (RODAC)** - to see the amount of all viable microorganisms remaining on each surface and by cotton swabs wetted with sterile buffer (aprox 50-100 sq-cm sampled/swab).

The plates were incubated at $32\pm 0.5^\circ\text{C}$ for 48 hours and examined for growth. The number of colonies was counted and the number of colony forming units (CFU) per RODAC or per swab was reported.

The percent of reduction was calculated and the results are presented in the following table (1).

Table 1: Antimicrobial Effect

| | <u>initial count</u> | | <u>after contamination</u> | | <u>after disinfection</u> | | <u>% reduction</u> |
|--------------------------|----------------------|--------------|----------------------------|-----------------------------|---------------------------|--------------|--------------------|
| | <u>SWAB</u> | <u>RODAC</u> | <u>SWAB</u> | <u>RODAC</u> | <u>SWAB</u> | <u>RODAC</u> | |
| Patient bed- head pillow | <u>150</u> | <u>84</u> | <u>53000</u> | <u>To numerous to count</u> | <u>46</u> | <u>19</u> | <u>99.91%</u> |
| armchair - paramedic | <u>450</u> | <u>190</u> | <u>78000</u> | <u>To numerous to count</u> | <u>20</u> | <u>12</u> | <u>99.97%</u> |
| Medicine drawer | <u>80</u> | <u>25</u> | <u>33000</u> | <u>To numerous to count</u> | <u>140</u> | <u>19</u> | <u>99.57%</u> |
| Driver steer wheel | <u>890</u> | | <u>180000</u> | | <u>3500</u> | | <u>98.06%</u> |

Conclusions

This preliminary study shows the presence of a relatively high microbial background as it appears after the initial sampling, particularly in the driver wheel and the paramedic armchair. It is recommended to repeat the experiment with a longer exposure time of the disinfectant. It may be useful to disinfect the driver's wheel by thorough physical means not only by spreading the product on the surface of the wheel.

All protocols recommend cleaning surfaces before disinfection. This preliminary experiment shows that even without cleaning, the product was effective in reducing by more than 98% (driver's wheel) and at least 99.5% the different surfaces sampled. **Biomist** was shown to be effective in disinfecting most surfaces in the ambulance where a medium to high disinfection level is required.



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