

ORAL PRESENTATION

Open Access

Using innovative antimicrobial glove technology to reduce the risk of surgical wound contamination following glove perforation

CE Edmiston Jr^{1*}, CJ Krepel¹, BD Lewis¹, KR Brown¹, PJ Rossi¹, GR Seabrook¹, G Daeschlein²*From* International Conference on Prevention & Infection Control (ICPIC 2011)
Geneva, Switzerland. 29 June – 2 July 2011

Introduction / objectives

Surgical gloves create a protective barrier, however high perforation rates (6%>60%) are reported in the literature. A recent study has suggested linkage between glove perforation and increased risk of SSI. This investigation evaluated a model of microbial passage through conventional single (A), double-thickness (B) and a tri-layer innovative surgical glove (C) with antimicrobial activity.

Methods

Bacterial passage was assessed following multiple glove puncture using *S. aureus* and *B. (Pseudomonas) diminuta* (BD) in a model of gross wound contamination in volunteers in Groups A, B and C. Using microbiological methods bacterial passage was assessed at 5, 10, 30 and 45 minute exposure, expressed as cfu per unit time. A total of 6 repetitions were made for each glove/time interval. The Mann Whitney test was used to assess the differences in microbial passage between the three groups.

Results

Microbial passage was evaluated separately (5, 10, 30 and 45 min) and combined (5/10 and 30/45). No significant differences were observed in microbial passage between Groups A and B at 10, 30, or 45 minutes, a significant difference was observed in Group C at 5, 30 and 45 minutes compared to A and B for SA and BD. When timed groups were combine a significant reduction in passage of SA and BD was observed compared to Groups A and B.

Conclusion

An antimicrobial surgical glove was effective at reducing microbial passage ($p<0.05$ - $p<0.005$) following glove perforation compared to single or double-layer gloves. These findings suggest further studies are warranted to assess the clinical efficacy of an innovative antimicrobial glove technology as a SSI risk reduction strategy.

Disclosure of interest

None declared.

Author details

¹Surgery, Medical College of Wisconsin, Milwaukee, Wisconsin, USA. ²Ernst Moritz Amdt University, Greifswald, Germany.

Published: 29 June 2011

doi:10.1186/1753-6561-5-S6-O33

Cite this article as: Edmiston et al.: Using innovative antimicrobial glove technology to reduce the risk of surgical wound contamination following glove perforation. *BMC Proceedings* 2011 5(Suppl 6):O33.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



¹Surgery, Medical College of Wisconsin, Milwaukee, Wisconsin, USA
Full list of author information is available at the end of the article