BMC Proceedings

POSTER PRESENTATION Open Access

Hospital point-of-use water filtration to prevent exposure to waterborne pathogens

SM Camps[1*], AJ Rijs[1], B de Graaf[2], AH Paulitsch[3], PE Verweij[1], A Voss[1]

From International Conference on Prevention & Infection Control (ICPIC 2011)
Geneva, Switzerland. 29 June – 2 July 2011

Introduction / objectives

Hospital water systems have regularly been shown to serve as a reservoir for waterborne pathogens such as *Legionella* spp, *Mycobacteria* spp and fungi, all able to cause life-threatening infections especially in immunocompromised patients. In this study, the suitability of new point-of-use water filters was evaluated in a clinical setting.

Methods

During a routine control of hospital water, contamination with *Legionella* spp. was detected. To protect the patients from exposure to *Legionella*, shower heads were replaced by point-of-use shower filters (H2OK medical filters, Norit Filtrix, The Netherlands). The efficacy of 4 shower filters was tested during 5 weeks. Water samples were taken with and without use of the shower filter and were analyzed for the presence of *Legionella*, heterotrophic plate count (HPC), and fungi. After 5 weeks of use, shower filters were examined using scanning electron microscopy (SEM).

Results

96% of the samples taken without the filter were positive for *Legionella* whereas all filtered water samples were *Legionella* free. Although other bacteria were present in the filtered water, the HPC was significantly reduced compared to the unfiltered water. *Fusarium oxysporum* and *Fusarium solani* were regularly detected in samples taken without shower filter but were never observed in filtered samples. SEM analysis showed a variety of structures on the inner side of the filter membranes while the outside of the membrane did not show any changes compared to an unused control filter.

Conclusion

The point-of-use filters proved to be highly effective in eliminating potentially pathogenic *Legionella* and *Fusarium* species from the showering water. The effects were seen over the complete 5 week study period.

Disclosure of interest

None declared.

Author details
[1]Medical Microbiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands. [2]Vitens Laboratories, Netherlands. [3]Wetsus, Leeuwarden, Netherlands.

Published: 29 June 2011

doi:10.1186/1753-6561-5-S6-P310
Cite this article as: Camps *et al.*: Hospital point-of-use water filtration to prevent exposure to waterborne pathogens. *BMC Proceedings* 2011 5 (Suppl 6):P310.

[1]Medical Microbiology, Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands
Full list of author information is available at the end of the article