Introduction

There is increasing recognition of the role of the healthcare environment as a reservoir for key pathogens, such as vancomycin-resistant enterococci (VRE). New automated environmental decontamination technologies utilising hydrogen peroxide and ultraviolet-C light (UVC) have been developed, which may have improved efficacy compared with manual disinfection.

The purpose of this study was to evaluate the efficacy of a pulsed xenon UV room disinfection device (PX-UV) in a centre for clinical haematology, which is at high risk for VRE.

Method

Two sampling methods were used to evaluate the device. i) Tryptone soya agar (TSA) contact plates for total surface aerobic colony count pre clean, post clean and post exposure to PX-UV. ii) Sponge recovery with broth enrichment to provide a sensitive presence/absence test for VRE post clean and post exposure to PX-UV. Ten rooms were sampled with contact plates and eight additional rooms sampled with sponge recovery. The total colonies on the TSA plates were enumerated after 48 hours incubation. Identification of VRE was established by standard laboratory methods.

Results

Median total aerobic counts pre-clean, post manual cleaning and post PX-UV were 35 S. 4 and 2 CFU respectively. Of the 160 samples taken post manual cleaning, 26 (16%) were positive for VRE. However after deployment of PX-UV, VRE was still recovered from 16 of 160 matched samples (10%).

Conclusion

The Xenex PX-UV system produced a greater reduction in total surface contamination compared to standard manual cleaning alone. However, it did not completely eradicate VRE from the environment. User feedback was positive and the increase in time taken to complete a room was 20 minutes meaning this technology could be used as an adjunct to manual cleaning process with minimal increase in overall time taken.

Conflict of Interest

Xenex provided a free loan of the PX-UV device for the duration of the study and provided funding for a member of the research team to attend conference last year.

Abstract ID: 2968

First UK trial of Xenex PX-UV room decontamination device

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Introduction

Seroprevalence for HAV and HEV was 92.68% (95% CI, 91.82, 93.47) and 17.05% (15.90, 18.26), respectively. Bivariate analysis found statistically significant association (p<0.05) between HAV and HEV seropositivity with various factors. Logistic regression showed that hand washing without soap, regular close contact with domestic animals, consumption of unpasteurized milk and irregular consumption of food outside home were risk factors for HAV (p<0.05). For HEV, irregular hand washing, consumption of unpasteurized milk and irregular consumption of freshly prepared food were risk factors (p < 0.05). Among patients, the distribution of HAV, HEV, hepatitis B surface antigen (HBsAg) and HCV was 10.22%, 21.87%, 16.98% and 3.74%, respectively.

Discussion

A high natural immunity against HAV among the healthy young adults clearly demonstrates that vaccination against HAV is not required at present. The large proportion being susceptible to HEV points towards the requirement of preventive strategies in the form of safe drinking water supply and sanitation, increasing awareness through information, education and counselling, and behaviour change with respect to personal hygiene especially hand and food hygiene.

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Improvements in pain, odour, sleep and social activities for patients with chronic wounds using novel aqueous oxygen peroxide (AOP) technology

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Introduction

Chronic venous leg ulcers (VLUs) are a common cause of morbidity in community settings. Patients with VLUs often experience pain, odour, sleep interruption and reduced participation in social activities. We evaluated the impact of applying aqueous oxygen peroxide (AOP) on the quality of life for patients with VLUs.

Methods

We performed a primary care based, double-blind, randomised, placebo-controlled trial (RCT) and a small follow-on evaluation. 61 patients suffering with chronic, static venous leg ulceration were included in the RCT, and randomised to two weeks of treatment with 20 parts per million AOP or sterile water placebo. Four patients were enrolled in the follow-on evaluation designed to explore the impact on patients’ quality of life in more detail: all patients in this evaluation were treated with AOP. RCT patients scored pain before and after each treatment using a 0-100 point Likert scale. Patients in the follow-on evaluation scored pain, impact on sleep pattern, social activities and odour pre and post treatment, or at 6 weeks, whichever came first.

Results

Patients treated with AOP experienced greater reductions in ulcer pain after treatment compared with placebo treatment (mean reduction 28.4 vs. 9.6, p=0.001). In the follow-on evaluation, average pain (6.0 vs. 3.5), odour (5.0 vs. 0.0), impact on sleep (4.3 vs. 0.8), and impact on social activities (5.8 vs. 3.3) were all reduced (composite quality of life average 5.2 vs. 1.9, p=0.001).

Discussion

The use of AOP in general practice produced reductions in ulcer pain and wound odour, which is likely to be linked to the antimicrobial properties of AOP. We also recorded improvements in sleep and participation in social activities for patients treated using AOP. Treatment of chronic VLUs in general practice using AOP confers substantial benefits to a patient’s quality of life.