Table 2. Multivariable Cox regression model of the acquisition of Carbapenem-resistant Acinetobacter baumannii

Table 2. Multivariable Cox regression model of the acquisition of Carbapenem-resistant *Acinetobacter baumannii*

| | Beta-coefficient | Hazard ratio (95% CI) | p-value |
|---|---|---|---|
| **Room privatization** | -1.540 | 0.214 (0.121-0.382) | 0.000* |
| **Length of stay in ICU** | -0.016 | 0.984 (0.965-1.004) | 0.114 |
| **Feeding tube** | 1.555 | 4.737 (1.907-11.762) | 0.001* |

*p < 0.05; CI, confidence interval

***Conclusion.*** In the present study, room privatization of the ICU was correlated with the reduction of CRAB acquisition independently. Remodeling of the ICU to the single room would be an efficient strategy for preventing the spreading of multidrug-resistant organisms and hospital-acquired infection.

***Disclosures.*** **All Authors**: No reported disclosures

**814. A Quasi-Experimental Study on Stethoscopes Contamination with Multidrug-Resistant Bacteria: Its Role as a Vehicle of Transmission**

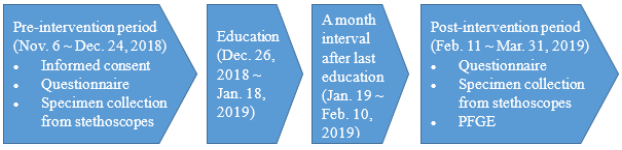
Raeseok Lee, MD[1]; Su-Mi Choi, MD, PhD[1]; Sung Jin Jo, MD[2]; Songyi Han, MS[3]; Yun Jeong Park, MS[3]; Min A Choi, BSN[3]; [1]Division of Infectious Diseases, Department of Internal Medicine, College of Medicine, The Catholic University of Korea, Seoul, Korea, Seoul, Seoul-t'ukpyolsi, Republic of Korea; [2]Department of Laboratory medicine, College of Medicine, The Catholic University of Korea, Seoul, Korea, Seoul, Seoul-t'ukpyolsi, Republic of Korea; [3]Department of Hospital Infection Control, Yeouido St. Mary's hospital, The Catholic University of Korea, Seoul, Korea, Seoul, Seoul-t'ukpyolsi, Republic of Korea

**Session:** P-34. HAI: Disinfection/Sterilization & Environmental Infection Prevention

***Background.*** Stethoscopes have been suggested to be a possible vector of contact transmission. However, only a few studies have focused on the prevalence of contamination by multidrug-resistant (MDR) bacteria and the effectiveness of disinfection training to reduce. The aim of this study is to investigate the burden of stethoscope contamination with nosocomial pathogens and multidrug-resistant (MDR) bacteria and to analyze habit changes in the disinfection of stethoscopes before and after education and training.

***Methods.*** We performed a prospective pre and post quasi-experimental study. All participants were surveyed on their disinfection behavior and stethoscopes were cultured by pressing the diaphragm directly onto a blood agar plate before and after education on disinfection. Pulsed-field gel electrophoresis (PFGE) was performed to determine the relatedness of MDR bacteria.

Fig. 1. Study flow for pre and post quasi-experimental study. Abbreviations. PFGE, Pulsed-field gel electrophoresis




***Results.*** Most of the stethoscopes were contaminated with microorganisms, 97.9% before and 91.5% even after intervention. The contamination rate of nosocomial pathogens before and after education was 20.8 % and 19.2%, respectively. Stethoscope disinfection habits were improved (55.1% *vs* 31%; $p< 0.001$), and the overall bacterial loads of contamination were reduced (median CFUs 15 vs 10; $p=0.019$) after the intervention. However, the contamination rate by nosocomial pathogens and MDR bacteria did not decrease significantly. A carbapenemase-producing *Klebsiella pneumoniae* from the stethoscope was closely related to isolates from the patients admitted at the same ward where the stethoscope was used.

Fig. 2. Changes in colony forming units of bacteria isolated from stethoscopes between pre and post intervention period. Abbreviations. CFUs, colony forming units; ns, non-specific

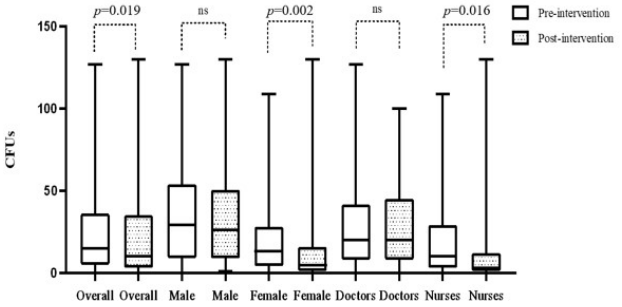



Fig. 3. Result of PFGE and dendrogram of carbapenemase-producing K. pneumoniae from the stethoscope and the patients where the stethoscope was used. Percentage similarities are shown above the dendrogram. Note. ST_7W, K. pneumoniae from the stethoscope; SM 01 to 03, K. pneumoniae isolates form the patients; PFGE, Pulsed-field gel electrophoresis

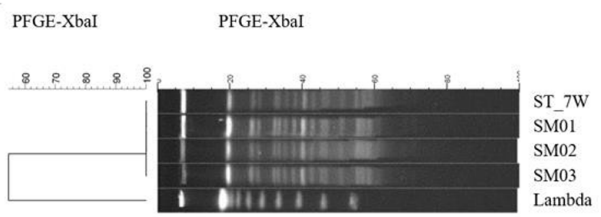



Table 1. Contamination rates caused by nosocomial pathogens and proportion of MDR bacteria

Table 1. Contamination rates caused by nosocomial pathogens and proportion of MDR bacteria

| | Pre-intervention samplings (n=96) | | Post-intervention samplings (n=94) | |
|---|---|---|---|---|
| Nosocomial pathogens | Contamination, number (%) | MDR, number (%) | Contamination, number (%) | MDR, number (%) |
| Overall | 20 (20.8%) | 3 (3.1%) | 18 (19.2%) | 6 (6.4%) |
| *S. aureus* | 13 (13.5%) | 2 (2.1%)[a] | 15 (15.7%) | 4 (4.3%) |
| *Enterococcus* | 6 (6.3%) | 0 (0.0%) | 4 (4.3%) | 0 (0.0%) |
| *A. baumannii* | 0 (0.0%) | 0 (0.0%) | 1 (1.1%) | 1 (1.1%) |
| *P. aeruginosa* | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |
| *Enterobacteriaceae* | 3 (3.1%) | 1 (1.2%) | 2 (2.1%) | 2 (2.1%) |
| *K. pneumoniae* | 1 (1.2%) | 1 (1.2%)[b] | 1 (1.1%) | 1 (1.1%)[c] |
| *E. coli* | 0 (0.0%) | 0 (0.0%) | 1 (1.1%) | 1 (1.1%)[b] |
| *Enterobacter* | 2 (2.3%) | 0 (0.0%) | 0 (0.0%) | 0 (0.0%) |

Abbreviations: MDR, multidrug-resistance
[a]Methicillin-resistant *Staphylococcus aureus*
[b]Extended-spectrum beta-lactamase
[c]Carbapenemase-producing *Enterobacteriaceae*

***Conclusion.*** Stethoscopes were contaminated with various nosocomial pathogens including MDR bacteria and were very likely to be a vehicle of MDR bacteria. Healthcare workers feel the need for education and think it helps, but continuous, consistent education and training should be done in multifaceted approach to reduce the nosocomial transmission via stethoscopes.

***Disclosures.*** **All Authors**: No reported disclosures

**815. Biofilm Accumulation in New Flexible Gastroscope Channels within 30 Days in Clinical Use**

Mariusa G. Primo, PhD[1]; Dayane M. Costa, PhD[2]; Simone V. Guadagnin, MN[1]; Adriana S. Azevedo, MN[1]; Michelle J. Alfa, B.Sc., M.Sc., Ph.D[3]; Karen Vickery, BVSc, MVSc, PhD[4]; Lara Stefânia N. Leão-Vasconcelos, PhD[5]; Anaclara F. Tipple, PhD[6]; [1]Clinics Hospital, Federal University of Goiás, Goiânia, Goias, Brazil; [2]Postgraduate Program in Nursing, Federal University of Goias, GOIANIA, Goias, Brazil; [3]University of Manitoba, Winnipeg, Manitoba, Canada; [4]Macquarie University, Sydney, New South Wales, Australia; [5]Institute of Tropical Pathology and Public Health, Federal University of Goiás, Goiânia, Goias, Brazil; [6]Faculty of Nursing, Federal University of Goiás, Goiânia, Goias, Brazil

**Session:** P-34. HAI: Disinfection/Sterilization & Environmental Infection Prevention

***Background.*** Flexible endoscopes are complex-design reusable devices, with long and narrow channels, making reprocessing difficult. Biofilm formation is a key factor for persistent contamination, as it protects microorganism against cleaning and disinfection agents. The aim of this study was to assess the accumulation of biofilm on the inner surfaces of new flexible gastroscope channels after 30 days of patient-use and full reprocessing.

***Methods.*** Three flexible gastroscopes (FG) (GIF–Q150, Olympus™) with new internal channels (Teflon™) were subjected to 30 days of clinical use and reprocessing by trained nursing personnel, using a revised reprocessing protocol, at the endoscopy service of a Brazilian teaching hospital (235 beds). The reprocessing protocol included: pre-cleaning; manual cleaning; automated cleaning and disinfection - 2% Glutaraldehyde; manual drying (forced-air drying) and alcohol rinsing, and storage in vertical position in exclusive cabinets. Then, internal channels were removed from the three patient-ready FG (three biopsy, three air, three water and three air/water junction channels), and the inner surface subjected to bacteriological culture (~30 cm) (n=9) and Scanning Electron Microscopy (SEM) (~1 cm) (n=12). Air/water junctions (~1 cm) were subjected to SEM only.

***Results.*** The average of use/reprocessing of the FG was 60 times. Bacterial growth was detected in 6/9 channels (three from FG#1 showed residual moisture) and seven bacterial isolates were recovered, most from air or water channels (Fig 1). Inner surface structural damage was identified in 11/12 channels by SEM. Extensive biofilm was detected in air, water and air/water junction channels (7/12) (Fig 2). Residuals matter were detected in all channels (12/12).