

disinfection methods except that after autoclave, respirators within valid date have significant lower breathing resistance compared with the expired respirators ($p=0.0282$).

Although the various storage periods of N95 respirators reveal statistical significance, however, this is not the major affecting factor of filters fibre charge and filter quality. The method of Gamma irradiation appears stronger than storage period and autoclave method in affecting filters fibre charge and qf.

Poster Presentation

Occupational Medicine (SCOM/Modernet)

0118 SAMPLING EVALUATION OF BIOAEROSOL AND ANTIBIOTIC-RESISTANT CHARACTERISTICS IN INTENSIVE CARE UNIT

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Our research was based in a medical centre's Internal Medicine Intensive Care Unit (MICU) and Surgery Intensive Care Unit (SICU) located in central Taiwan. Three bioaerosol samplers were utilised (Anderson six-stage, AGI-30, and BioSampler) for sampling. Upon acquisition of samples, they were inoculated and cultured on BBL Trypticase Soy Agar (with 5% Sheep Blood) medium for growth. The bacterial colonies were later identified and analysed for antibiotic-resistant characteristics via BD Phoenix automated microbial identification and susceptibility test analyzer.

Research results have showed from the bioaerosol samples acquired within the MICU that bacteria and fungi below cut off size of 4.7 μm were primarily due to high possibility to enter human lung's alveolar regions of the body, thereby causing opportunistic infections. In terms of bacterial strain identification, Gram-positive bacteria were mainly isolated with biosafety level of II. As for antibiotic-resistant bacteria analysis of MICU, strains were identified 63.5% that were resistant to National Health Insurance Administration (NHIA) designated first (17 types) and second (18 types) line antibiotics. This phenomenon could very likely affect the medical staffs working within the hospital environment. As a result, recommendations for MICU ventilation designs should be carefully evaluated for the effectiveness of controlling nosocomial infections as well as proper implementation of personal protective equipment in order to reduce bioaerosol opportunistic infections and harmful exposure effects.

Oral Presentation

Pesticides

0119 DNA VARIANTS AND ORGANOPHOSPHATE NEUROTOXICITY AMONG EMERGING FARMERS IN THE WESTERN CAPE OF SOUTH AFRICA

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Background Modulation of organophosphate (OP) neurotoxicity by genetic polymorphisms of xenobiotic metabolising enzymes (XMEs) has not previously been investigated

Objectives To investigate whether XMEs polymorphisms modify OP neurotoxicity among emerging farmers.

Methods A cross-sectional study of 301 emerging farmers was conducted. Neurotoxicity testing included forward and backward recall digit span and vibration sensitivity testing. Questionnaire data included demography, potential confounders and work history of pesticide exposures. Genomic DNA was analysed from study participants for DNA variants of two glutathione S-transferases (GST), N-acetyltransferase 2 (NAT2) and Paraoxonase 1 (PON1).

Results The median age of workers was 39 years (range: 30–48 years) of whom 54% were OP pesticide applicators. There was a low prevalence of the null genotype for GSTT1 (1%) and for GSTM1 (16%), while the genotypic frequency for the GA and AA grouping of rs1799931 (NAT2) was 10%. There was evidence of OP pesticide neurotoxicity modification by rs1799931 (NAT2), rs662 (PON1) and the null allele of GSTM1 in multivariate analysis. The strongest evidence of modification was observed for rs1799931 (NAT2) on the relationship between pesticide poisoning and impaired vibration sense. The increased prevalence of impaired vibration sense in OP poisoned compared to non-poisoned workers (Odds ratio=5.7, 95% confidence interval (CI): 1.4–22.7) was higher among those with the GG genotype than those with the GA and AA genotypes (Odds ratio=1.5, CI: 0.1–43.2).

Conclusion DNA variants of NAT2, PON1 and GSTM1 may modify OP neurotoxicity and this requires further exploration

Poster Presentation

Other

0120 PREDICTING LONG-TERM SICKNESS ABSENCE AND SUPPORTING RETURN-TO WORK PROCESSES, A QUANTITATIVE RESEARCH

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