The fitness of N95 respirators among undergraduate Chinese nursing students in Hong Kong
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Background: Centre for Health Protection in Hong Kong advocates healthcare workers to wear N95 respirators during the outbreak of infectious respiratory diseases. Nevertheless, it is evident that the effectiveness of N95 respirator is contingent upon its fitness to the wearer. This study, therefore, aims to explore the undergraduate Chinese nursing students’ fitness for N95 respirators in Hong Kong.

Methods: A cross-sectional descriptive and prospective design was used in this study. Convenience sampling was adopted to solicit 204 undergraduate nursing students to participate in the study. Two types of N95 respirators, namely 3M 1860s and 3M 1862, were being used to test their fitness for each participant. A quantitative fit testing device, the PortaCount Respirator Fit Test System which is recommended as the international gold standard in determining the fitness of respirators, was used to measure the users’ fitness for those two types of respirator. “Fit factor” was then calculated. A score over 100 was considered as pass, and the respirator was said to be fitted for the participant.

Results: 61.3% (n = 125) and 57.4% (n = 117) of the participants were found to be fitted for 3M 1860s and 3M 1862 respirator respectively. 81.4% (n = 166) of the participants passed the fit test in either one of the models. Only 37.3% (n = 76) of the participants were found to be fitted for both models. The use of Chi Square also indicated that there was no association between the fitness for these two models of respirator (X² = 1.57, p = 0.134).

Conclusion: Only one third of undergraduate Chinese nursing students are fitted for both 3M 1860s and 3M 1862 N95 respirators. Most of the students could only fit for either one model. Therefore, fitness must be ensured via the conduction of fit test to confirm the type of respirators that could offer maximum protection for the students.

Multi-drug resistance analysis of pathogens of ventilation-associated pneumonia in ICU
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Background: To observe the distribution of pathogens of ventilation-associated pneumonia (VAP) in intensive care unit (ICU) and the condition of their multi-drug resistance to antibiotics.

Methods: A retrospective clinical study on 112 patients with VAP was carried out from January 2005 to December 2009. The pathogens and their multi-drug resistance were analyzed.

Results: A total of 112 pathogen strains were identified by bacterial culture, of which Gram-positive cocci were 9 strains, Gram-negative cocci were 93 strains, and fungi were 10 strains. The most common isolated bacteria of the pathogen spectrum in VAP were Acinetobacter baumannii, Klebsiella pneumoniae, Escherichia coli, Acinetobacter and Pseudomonas aeruginosa. Drug sensitivity tests indicated that the bacteria had higher multi-drug resistance to antibiotics. The ratios of baumannii resistant to carbapenems, cefepime, piperacillin plus sulbactam, ceferozame plus sulbactam were 69.6%, 73.9%, 69.6%, 86.9%, respectively; and the ratios of Klebsiella pneumoniae were 36.4%, 36.4%, 45.5%, 45.5% respectively; the ratios of Pseudomonas aeruginosa were 25.0%, 41.7%, 33.3%, 83.3% respectively; the ratios of E. coli were 0, 27.2%, 27.2%, 27.2% respectively.

Conclusion: The major pathogens in VAP were Gram-negative cocci and they were often multi-drug resistant pathogens. Particular attention should be paid to detection of the bacteria from lower respiratory treatment, and the selection of antibiotics.

Acinetobacter baumannii infections in patients with pneumonia
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Background and Aim: Despite of the detailed study, the role of Acinetobacter baumannii pathogen as an ubiquitous opportunistic nosocomial pathogen is still discussed. The most of epidemiological aspects of this infection are still discussed though the problem of the microbiology characteristics of this pathogen are of keen microbiology interest. It is often isolated in immunocompromised hosts in different forms of hospital-acquired infections, but more often it was recognized as the main pathogen agent of hospital-acquired pneumonia. The aim of our research was to establish clinical significance of Acinetobacter baumannii in development of hospital-acquired pneumonia, to define its epidemiology and to characterize antimicrobial agents resistance pattern.

Material and Methods: We made 1-year surveillance of all hospital-acquired pneumonias (HAP) in adult patients in the main clinics of Vladivostok (Hospital No. 1, No. 2), defined etiology with standard microbiology methods. All isolates of A. baumannii were tested for antimicrobial agents resistance according to NCCLS. The strains with the same antimicrobial agents resistance pattern were checked to clonality by pulsed-field gel electrophoresis (PFGE).

Results: During 2008–2009 year we studied all cases of HAP in 450 adult patients (>60 years) admitted to ICU and revealed that A. baumannii has taken the second place in etiology structure (19.1%, 94 cultures from 86 patients). The first place was in Pseudomonas aeruginosa (29.3%, 132 strains) and the third one was in Stenotrophomonas maltophilia (11.7%, 53 strains). Mostly (58 strains, 61.7%), A. baumannii was isolated as monoinfection, but in other cases it was isolated in association with another strains of A. baumannii, or P. aeruginosa, S. maltophilia, S. aureus, E. faecalis, E. cloacae. There were defined lower resistance to ciprofloxacin. The clonality research revealed about 8 genotype clusters what could allow to suggest the genetic relatedness of the isolates.

Conclusion: Acinetobacter baumannii should be studied to define the role in hospital-acquired infections.

Clinico-bacteriological studies in Erythema multiforme and the role of Mycoplasma pneumoniae
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Introduction: Erythema multiforme is a clinical reaction pattern of the skin probably based on hypersensitivity reaction to several factors and characterized by target lesions. Erythema multiforme is an acute and frequently inflammatory disease with skin and mucous membrane lesions and in severe cases with constitutional symptoms and visceral lesions.

Aim: To study the bacteriology of Erythema multiforme and determine the role of Mycoplasma pneumoniae.