

21st World

NURSING EDUCATION CONFERENCE

July 16-18, 2018 Melbourne, Australia

Microtiter plate-based method for monitoring formation and anti-bacterial susceptibility testing of *Staphylococcus epidermidis* biofilms**Im Fong Lam**

Macao Polytechnic Institute, Macao

Background: *Staphylococcus epidermidis* is one of the normal floras that can be found on human skin. Normally, it will not cause disease. But in some situation such as catheters, dialysis treatment, implantation of artificial cardiac valve, joint prosthesis and intraocular lens can cause disease. *Staphylococcus epidermidis* can form biofilms on inorganic materials and get into the blood circulation; it undergoes a phenotypic change resulting in increased antibiotic resistance.

Objectives: To analyze and compare the antibiotic susceptibility in the planktonic form using the standard Minimum Inhibitory Concentration (MIC) and in a biofilm using Minimum Biofilm Eradication Concentration (MBEC) and optimizing the results of MBEC by XTT reduction test.

Methods: 13 clinical isolates of *Staphylococcus epidermidis* from central nervous catheter were collected. They were analyzed for their antibiotic susceptibility by using the standard minimum inhibitory concentration and minimum biofilm eradication concentration. Chi-square was used to compare the sensitivity results. XTT reduction test were performed on biofilm positive *Staphylococcus epidermidis*.

Results: 3 of 13 clinical isolates are biofilm positive *Staphylococcus epidermidis*. The isolates were susceptible to antibiotics tested using MIC and lost its efficacy when the bacteria were grown in biofilm. The change in susceptibility was significantly high for all antibiotics tested.

Conclusion & Discussion: Patient with sepsis or isolated of *Staphylococcus epidermidis* from central nervous catheter is long standing or not responsive to therapy, MBEC testing should be considered as a biofilm may be present. XTT reduction test can optimize and show the quantitative result of MBEC. And also, the newer antibiotics for *Staphylococcus* should be tested for their performance in a biofilm using the XTT method.

Biography

Im Fong Lam is a Lecturer, Registered Medical Technologist (MT), a Doctoral candidate of Zinan University, China. She has completed her Master's degree from Zinan University, China in Faculty of Medicine and Bachelor's degree (Technology for Medical Sciences) from Kaohsiung Medical University, Taiwan. She was a Medical Technologist and Member of Infection Control Committee in Kiang Wu Hospital. Currently, she is Lecturer of Macao Polytechnic Institute, primarily teach microbiology to nursing students. Her research interest is in microbiology and Immunology.

iflam@ipm.edu.mo

Notes: