

## CHARACTERISTICS AND MICROBIOLOGY PROFILE OF PATIENTS WITH DIABETIC FOOT INFECTIONS IN KUANTAN, PAHANG

**Kow Ren Yi**<sup>1\*</sup>, Low Chooi Leng<sup>1</sup>, Mohd Adham Shah Ayeop<sup>1</sup>, Aminudin Che Ahmad<sup>1</sup>, Mohd Shukrimi Awang<sup>1</sup>

<sup>1</sup>International Islamic University Malaysia, Malaysia

\*Corresponding author's email: [renyi\\_kow@hotmail.com](mailto:renyi_kow@hotmail.com)

### ABSTRACT

The number of people suffering from diabetic foot infection (DFI) has increased precipitously over the years in Malaysia, owing to increased population, urbanization, the surge of number of people with obesity and physical inactivity. As one of the most dreaded complications of diabetes mellitus, DFI is associated with high morbidity and mortality. We aim to study the microbiological profile of patients with DFI at a university hospital in Kuantan, Pahang. This retrospective study is carried out at International Islamic University Malaysia Medical Center to study patients admitted from 1<sup>st</sup> of January 2018 to 30<sup>th</sup> April 2019. Patients' demographic data, types of infection and surgical intervention, and the microbiological profile are obtained from the medical records. A total of 142 causative pathogens are cultured from 130 tissue samples, with an average of 1.09 pathogens per lesion. Majority of the pathogens are gram-negative pathogens (52.8%). *Staphylococcus sp.* is the most common pathogen isolated (22.5%). This is followed by *Streptococcus sp.* (10.6%), *Pseudomonas sp.* (9.2%), *Morganella sp.* (5.6%), *Klebsiella sp.* (4.9%), *Enterobacter sp.* (4.9%), and others. Among the 142 pathogens, there are 9 multidrug-resistant strains observed. Most of the antibiotics are effective against the gram-positive pathogens except benzylpenicillin, tetracyclin, fusidic acid and ciprofloxacin. Meanwhile, cefotaxime, amoxicillin and ampicillin-sulbactam are also not suitable against gram-negative pathogens. Oxacillin and sulfamethoxazole/trimethoprim can be used as empirical antibiotics against gram-positive pathogens, while vancomycin should be reserved for patients with septic shock or suspected multidrug resistant strain infection. Piperacillin/tazobactam and ceftazidime can be used as empirical antibiotics against gram-negative pathogens. Early initiation of empirical antibiotic(s) is paramount to stymie the infection from getting worse while waiting for the identification of causative pathogens in the management of DFI. This study provides a guide for treating physicians to initiate the most appropriate empirical antibiotic in DFI.

**Keywords:** diabetic foot infection; diabetic ulcer; antibiotic; microbiology.