Carbapenem and colistin usage: Is there a correlation?

*Syamhanin A, Hannah MM, Izzyana Munirah I

Pharmacy Department, Hospital Sungai Buloh

Abstract

Surveillance of antimicrobial use will provide insights on how antimicrobials are being used in healthcare settings. It is a useful tool for benchmarking and is essential in development of antimicrobial stewardship strategies\(^1\). Antimicrobial utilisation surveillance was established in Malaysian hospitals since 2001, known as National Surveillance on Antibiotic Utilisation (NSAU). Numerous studies have shown significant correlation between consumption of broad spectrum antibiotics and resistance in bacteria through selection pressure. Correlation between carbapenem and MDR pathogen was reported in numerous studies, thus, theoretically, high use of carbapenems could subsequently causes the surge in use of colistin. Therefore, high use of colistin could be the surrogate maker for carbapenems. This study is to explore the correlation between the use of carbapenem and colistin and findings of this study would later guide us to develop our specific AMS strategies. Objective of this study is to explore the correlation between the use carbapenem and colistine in our ICU, defined as DDD according to WHO, from January 2014 until December 2015. Monthly antimicrobial utilisation data were retrieved retrospectively from the electronic data base of pharmacy department from year 2014 until year 2015. 24 data point (Jan 2014 until Dec 2015) were collected. Sequence chart and correlation test, using pearson correlation, were carried out using SPSS software version 20.0. Sequence chart of both carbapenem and colistin data in ICU, from 2014 to 2015, was plotted and has shown positive correlation, R=0.572. The correlation was statistically significant (\(p=0.03\)). Findings of this study have illustrated the positive and strong correlation between the usage of carbapenem and colistin. Therefore, it is strongly recommended to restrict the use of carbapenem, as one of the important AMS strategies, whenever there is a surge in colistin use in health care facilities.

Keywords: colistin, multi drug resistant pathogen, correlation

*Authors for Correspondence