

## EVALUATION OF CARBAPENAEMIC TREATMENTS AND ANTIMICROBIAL STEWARDSHIP

P. LaTorre, N.El Hilali, M. De temple, P.Montoliu. L. Galofré, C. Seguí, M.Gaya, M.Pons  
Hospital Universitari Sagrat Cor, Pharmacy Dept.- Barcelona Spain

### Objectives

Infections caused by resistant bacteria have increased in recent years becoming one of the most important problems for health systems. The implementation of antimicrobial stewardship programs is important to achieve the correct drug, dose, de-escalation, and treatment duration in each patient. The goal of such programs is to reduce the development of resistant organisms and to ensure that use of antibiotics does not result in deleterious effects to patients.

### Purpose

The objective of the present study is to evaluate the use of carbapenem antibiotics in our hospital and asses the results of implementing an antimicrobial stewardship program (AS).

### Materials and Methods

For 3 months patients treated with carbapenem antibiotic were evaluated by AS during the first week of treatment. Age, antibiotics, length of stay (LS), treatment duration (TD), immunosuppression state, sepsis, prescribing departments, diagnoses, type of treatment (direct or empirical), and in case of positive cultures the type of bacteria, were registered. The intervention of AS, if de-escalation and/or modification of TD and the acceptance were also registered.

### Results

✓ AS reviewed 94 treatments with carbapenem antibiotics; mean age of patients was 78 years (IQR, 71.4-87.1).

**68%** with *meropenem*, **31%** with *ertapenem*, and **1%** with *imipenem/cilastatine*.

The median LS were 15 days (IQR, 9-33).

The median TD was 7.2 days (IQR, 5-9.6).

20.2% of the patients were immunosuppressed and **71.3%** were **septic patients**.

✓ The main prescribing departments were:

**internal medicine 69%**, intensive care unit 7.5%, general and digestive surgery and gastroenterology 5.3% each department.

**59.6%** were **empirical** treatments and **40.4%** **direct** treatments.

✓ The main diagnoses were complicated cystitis (26.6%) and hospital acquired pneumonia (11.7%).

✓ Among the identified microorganisms **68.2%** were gram negative bacilli (**GNB**) with extended spectrum beta-lactamase, **15.8%** **gram-negative fermentative bacilli**, and 5.3% multiresistant GNB. **23.4%** of prescriptions **were evaluated as incorrect**.

✓ AS **suggested modifications in 37.2%** of treatments, **99%** of treatment recommendations were **accepted**: **65.7%**were **de-escalated** and the **TD** was **modified in 48.6%** of intervened treatments.

### Conclusions

Our results show the importance of implementing an antimicrobial stewardship program to review the antimicrobial therapy and optimize the treatments, to protocol he use of high spectre antibiotics, in order to maintain a low prevalence of resistance.