EV0908
ePoster Viewing
Nosocomial infection surveillance & epidemiology

How do we de-escalate therapy for Gram-negative nosocomial infections in an infectious diseases intensive care unit?

Antonia Gomes[1], Diana Neves*[1], Sergio Eduardo Paulo[1], Tiago Marques[1], Carla Santos[1], Luís Caldeira[1]

[1]*Hospital Santa Maria, Lisboa, Portugal*

Background:

Antibiotic treatment for nosocomial infections by Gram negative bacteria (GNB) is a complex decision as it depends on several factors such as: 1) data on local antimicrobial susceptibility, 2) double empirical antibiotic therapy needed in severe situations, 3) rigorous investigation of source of infection and 4) consideration of risk factors and comorbidities.

Material/methods:

We aimed to describe our experience with treatment strategy in empirical and posterior de-escalation therapies in nosocomial infections by GNB in our infectious diseases intensive care unit. We retrospectively reviewed the records of all the patients admitted between January 1st 2014 and November 5th 2015 with positive cultures for GNB. We assessed infection type, comorbidities and risk factors for nosocomial and multi-resistant infections, empiric therapy choices and their adequacy, and de-escalation and mortality rates.

Results:

Seventy-two infections by GNB were included, corresponding to 65 admissions, from which 57 were nosocomial infections.

Nosocomial infections were mainly sepsis with respiratory (77%) or urinary origin (21%). The most frequent empiric therapy was meropenem (48%) followed by piperaciline/tazobactam (46%). Meropenem was used mainly for respiratory tract infections (68%) and piperacilina/tazobactam for ventilator-associated pneumonia (78%) and in immunosuppressed patients (50%). Double therapy with amikacin was used in eight cases, all of which had septic shock and/or immunosupression.

Colistin was used as empirical therapy in four cases. The appropriate empirical therapy choice rate was 74%. In 18 cases, therapy was directed. Non-appropriate empirical therapy cases (n=10) were mainly due to isolation of multiresistant (*Enterobacteriaceas* (n= 5), *Acinetobacter baumanii* (n=3), *Pseudomonas aeruginosa* (n=2), and *Stenotrophomonas maltophilia* (n=2). The de-escalation rate was 38% (n=11/29). Antibiotherapy was not possible to de-escalated in 48% of cases (n=14/29). In four cases the antibiotherapy was switched for a more adequated one according to the clinical evolution. For multiresistant bacterial infections, we chose directed monotherapy (70%) or combination (N=30%) therapy, particularly for immunodepressed patients. Overall mortality rate was 18%.

Conclusions:

The widespread use of quinolone at a national level has lead to high enterobctereaceas and non-fermenting bacteria resistance rates. Using ciprofloxacine as part of double empirical therapy for Gram negative bacteria nosocomial infections is therefore inadequate in our institution. Thus amikacin is

preferred given its preserved sensitivity in most situations. Moreover, carbapenemase-producing *Klebsiella pneumoniae* are commonly detected since 2009 in our institution. De-escalation is done by default and considered a necessary and effective strategy to reduce antibiotics use and bacterial resistance, which is key in situations where a broad-spectrum therapy is needed for treating Gram negative nosocomial infections.