Optimising of antibiotic prophylaxis at cardiac surgery clinic

Background Antibiotic prophylaxis (AP) plays an important role in the prevention of surgical site infections in cardiac surgery. Despite the availability of many guidelines, the daily practice of AP is still far from optimal.

Purpose The first aim of the study was to evaluate the management of rational AP by means of a pre-intervention audit. The second aim was to assess whether the clinical practice of AP was improved after pharmacists’ interventions.

Material and methods Six parameters of AP (indication of AP, use of appropriate agent, proper initial dose, correct timing of first dose, perioperative redosing, adequate duration of AP) were evaluated by pharmacists during the pre-intervention audit at the Cardiovascular Surgery Clinic between March and April 2015. The data were obtained from medical records and the hospital information system. Based on the results of the pre-intervention audit and regional requirements, the local guidelines (LG) for AP were updated by microbiologists and pharmacists according to the Surgical Antimicrobial Prophylaxis Guidelines of American Society of Health-system Pharmacists. Two years later a post-intervention audit was performed where implementation of new LG were assessed by measuring the same six parameters as the pre-intervention audit. The results of both audits were compared at 50 cardiac surgeries.

Results AP was used in all indicated surgeries during the pre-intervention and post-intervention audit. Incorrect antibiotics were used in 11 per cent of all surgeries in the pre-intervention audit, while all antibiotics were appropriately chosen in the post-intervention audit. Appropriate initial doses were given in only 2 per cent in the pre-intervention audit compared with 92 per cent in the post-intervention audit. The correct timing of AP was increased from 76 per cent to 96 per cent t after the implementation of new LG. Perioperative redosing was given in none of the indicated cases in the pre-intervention audit compared with 100 per cent after intervention. AP was prolonged for more than 48 hours in 51 per cent in the pre-intervention audit versus 18 per cent in the post-intervention audit. The number of surgeries where all parameters were in accordance with the guidelines was increased from 0 per cent to 80 per cent after interventions.

Conclusion Poor acceptance of international guidelines was identified during the pre-intervention audit. The clinical practice of AP was improved after pharmacists’ interventions.

References

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Implementation of an empirical antibiotic treatment guide: impact on antibiotic prescription in an emergency department

Background An empirical antibiotic treatment guide (EATG) was implemented in our hospital in January 2017. This guide was developed by the antimicrobial stewardship team, composed of infectious disease specialists, microbiologists and pharmacists. The aim was to optimize the antibiotic prescription, avoiding the use of antibiotics associated with resistance development, such as quinolones, third-generation cephalosporins and carbapenems.1,2

Purpose To evaluate changes in the antibiotic consumption and their costs, after the EATG implementation in the Emergency Department of our hospital.

To analyse changes in the antibiotic prescription profile after this implementation.

Material and methods Retrospective study from 2016 to 2017 in a third-level hospital. The antibiotic consumption data and its costs in 2016 (pre-intervention) and 2017 (post-intervention) were compared. The data were obtained from the hospital pharmacy management programme (antibiotic treatment during the stay in the emergency room) and the primary care management programme (prescription at discharge). Antibiotic consumption is transformed into defined daily doses and adjusted to emergencies attended (EMERG) (data provided by the Admission Service).

The analysis was done in an Excel table 1 and statistical comparisons were performed with Fisher’s exact test provided