

EVALUATION OF THE QUALITY OF ANTIMICROBIAL PRESCRIPTIONS USING AN INNOVATIVE STEWARDSHIP TOOL

Abstract Number: 5631

Capoulas, M ⁽¹⁾; Palos, C ⁽²⁾; Lobo, T ⁽¹⁾; Cardoso, P ⁽¹⁾; Marques, E ⁽¹⁾; Santos, C ⁽³⁾

¹⁾ Pharmacist, Pharmacy services of Hospital Beatriz Ângelo, Portugal

²⁾ Coordinator of the Local Control Group of the Program for Prevention and Control of Infections and Resistance to Antimicrobials, Portugal

³⁾ Pharmacy Services director in Hospital Beatriz Ângelo, Portugal

INTRODUCTION

A significant proportion of antibiotics worldwide is inadequately prescribed (context, posology and duration), with negative economic and ecological impact, especially in the use of quinolones, carbapenems and anti-MRSA agents.

In order to optimize interventions in a paperfree hospital, a platform has been developed to control the prescriptions and document the multiprofessional interventions carried out under the Antimicrobial Prescription Support Program (PAPA). This system generates automatically generated e-mails on the prescription of conditioned antibiotics that are out of local guidelines. The first interventions are carried out by two doctors and two pharmacists of the Local Control Group of the Program of Prevention and Control of Antimicrobial Resistance and Resistance (GCL-PPCIRA), most of them in real time and within 48 h.

PURPOSE

To characterize the prescription of quinolones, carbapenems and anti-MRSA agents carried out at Hospital Beatriz Ângelo (HBA) in March 2016, using a locally developed platform.

METHODS

A prospective pilot analysis was carried out on the use of the PAPA platform, which integrates data referring to the prescribers, scope and characteristics of the prescription, initial interventions performed by the GCL-PPCIRA, follow-up by pharmacists in each sector, the acceptance rate by Physicians and registry of clinical-laboratory variables.



Fig 1: Environment of the platform developed to monitor the prescriptions and document the interventions carried out in the PAPA platform.



Fig 2: Window of the platform developed to monitor the prescriptions and document the interventions carried out in the PAPA field.

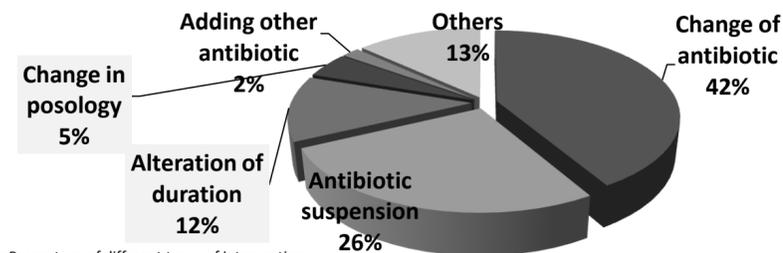


Fig 3: Window in the platform developed to monitor the prescriptions and document the interventions carried out in the PAPA field.

RESULTS

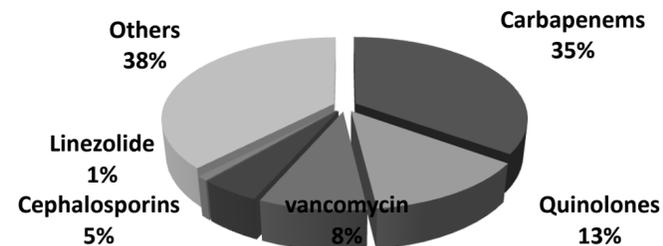
In the reviewed period, 220 conditional prescriptions alerts automatically generated by the prescription system were introduced on the platform and analyzed. Of these, 48% required interventions by GCL-PPCIRA. 50 of the suggested interventions were accepted (47.2%). However, in only 6.6% of the non-accepted interventions there was justification on the part of the attending physician and in 46.2% no justification was given.

The majority of interventions were alterations in the antibiotic (41.5%), suspension (26.4%), alteration in duration (12.3%), change in dosage (4.7%) and addition of antibiotics (1.9%).



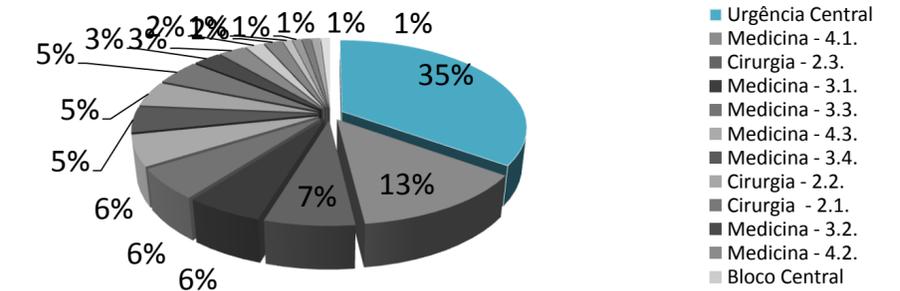
Graph 1: Percentage of different types of intervention.

Most interventions were performed on carbapenems (34.9%), followed by quinolones (13.2%) and anti-MRSA agents (9.4%), respectively, with an acceptance profile of 17, 6 and 4 cases.



Graph 2: Intervention rates in different antibiotic classes.

The majority of interventions were performed at the Emergency Department (34.9%).



Graph 3: Interventions by service

In this pilot study, the potential of the platform was not totally assessed, especially in regard to the clinical and laboratory evolution, adequacy of the intervention based on microbiology results and survival rates.

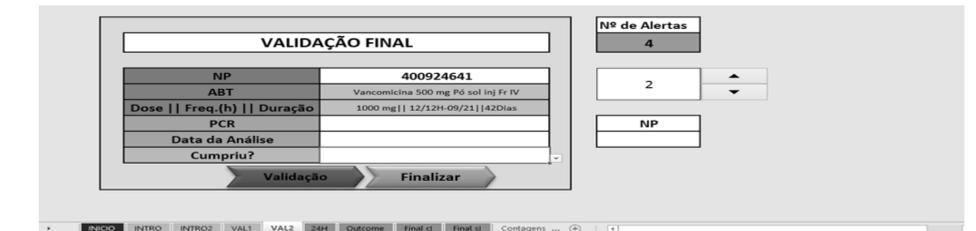


Fig 4: Module developed to monitor the prescriptions and document the interventions carried out in the PAPA platform.

CONCLUSIONS

Targeting the reduction of antibiotic resistance, the implementation of interventions under a PAPA should be complemented by an evaluation of the prescription and interventions themselves, with tools that integrate multiple information and that allow real time interventions of several professionals.

This pilot analysis shows that the rate of interventions in the total prescriptions generated is in line with international values, which translates into good robustness of the platform.

Finding data on the reasons for interventions and rate of acceptance (and other data not explored in this analysis) may contribute to the definition of strategies to improve good antibiotic prescribing practices, in particular for carbapenems, quinolones and anti-MRSA agents, from the prescriber to the institutional level.

REFERENCES

- Arnold, FW *et al.* "Improving antimicrobial use: longitudinal assessment of an antimicrobial team including a clinical pharmacist". *J Manag Care Pharm.* 2004. 10 (2):152-8.
- Core Elements of Hospital Antibiotic Stewardship Programs. Atlanta, GA: US Department of Health and Human Services, CDC. 2014.
- Programa de Prevenção e Controlo de Infecções e de Resistências aos Antimicrobianos. Direção-Geral de Saúde. 2015.

