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2-hour Oral Session

Tools and interventions to improve hospital antimicrobial prescription quality

The PIRASOA® programme: implementation and first outcomes of an antimicrobial stewardship programme based on educational interviews in all hospitals of the public health system of Andalusia, Spain.

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Background: Up to 50% of antibiotic treatments prescribed in hospital settings have been estimated to be inappropriate. The development of antimicrobial stewardship programmes (ASPs) in hospitals have proved to be key for improving antibiotic use. Our objective is to describe and report the implementation of an institutionally supported ASP involving all public hospitals in the region of Andalusia, Spain, and to provide preliminary data about its impact.

Material/methods: Design: Descriptive ecological study. Study period: The programme started on January 1st 2014. Data on indicators (see below) are prospectively recorded quarterly (here we present data until June 30th 2015). Setting: The program was carried out in all 34 Andalusian public centres (8 regional hospitals, 9 specialty hospitals and 17 district hospitals) attending 8.4 million population. Intervention: The PIRASOA® program (Institutional Programme for the Prevention, Control of Healthcare-Associated Infections and Appropriate Use of Antimicrobials) is a clinical-based, quality programme aiming at reducing the rate of hospital-acquired infections and improving antibiotic use. The key principle of the ASP part of PIRASOA® is educational; among other interventions, including the local adaptation of the ASP and the constitution of multidisciplinary antibiotic teams (MAT), educational counseling interviews performed by local experts with prescribers based on specific prescriptions were performed randomly. The interviews were performed using a pre-defined structure. Sixty-four indicators were established to measure the evolution of the programme and results. Feedback was provided to every hospital quarterly, allowing benchmarking and within centres evolution. The indicators measured included quality of prescription (appropriate antimicrobial treatments), antimicrobial consumption (DDD/1000 occupied bed days (OBD) (total and for specific antimicrobials and areas), incidence density of the most important multidrug-resistant pathogens, mortality due to pneumonia and bacteremia, and antimicrobial direct expenditure.

Results: The ASP was locally adapted and the MATs were formed in all hospitals. Adherence to indicators collection increased from 71% to 83%. A total of 8,222 counselling interviews were performed over the 6 quarters studied. The overall rate of inappropriate prescriptions decreased from 56% in the first quarter to 39% in the last. As regards average antibiotic consumption, a decrease from 935 to 791 DDDs per 1000 OBD (average reduction, -15%) was observed. In regional hospitals, the consumption of meropenem and imipenem decreased from 70.4 to 59.7 DDDs/1000 OBD, and that of quinolones 175 to 123 DDD/1000 OBD since the beginning of the programme. No significant changes in the rate of multidrug resistant pathogens were observed. Mortality rates did not show differences throughout the study.

Conclusions: We have successfully implemented an integral Antimicrobial Stewardship Programme in the region. The preliminary outcomes showed a trend towards an improvement in the quality of prescriptions and a reduction in antibiotic consumption.