The Netherlands

UMC Utrecht

GLOBAL-PPS
Antimicrobial Consumption and Resistance

The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): Results of antimicrobial prescribing in Dutch hospitals

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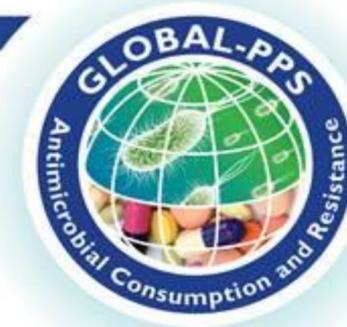
INTRODUCTION AND PURPOSE

The Netherlands is located in Europe and has a population of approximately 16,9 million. Antibiotic consumption and resistance in the Netherlands remains low compared to other European countries.

A uniform and standardized method for surveillance of antimicrobial use in hospitals was used to assess the variation in antimicrobial (AM) prescribing in the Netherlands.

METHODS

PPS was conducted between October 2014 and July 2015 in 2 general, 5 teaching and 1 university hospital in the Netherlands. The survey included all inpatients receiving an antimicrobial on the day of PPS. Data collected included age, gender, weight, antimicrobial agents, doses, reasons and indications for treatment, microbiological data, compliance to guidelines, documentation of reasons and stop/review date of prescription. Denominators included the total number of inpatients. For data-entry, validation and reporting a web-based application was used as designed by the University of Antwerp (www.global-pps.com).

RESULTS

During the PPS a total of 2364 patients were admitted to 191 different wards. The total AM prevalence rate was 33% (782/2364) with the highest prevalence rate on the paediatric intensive care units (62.5%) followed by the haematology-oncology adult ward (57.3%) and the haematology-oncology paediatric ward (55,5%). The top three most reported indications for AM use were pneumonia/lower respiratory tract infections (18,1%), medical prophylaxis (12.3%) and intra-abdominal sepsis (7.9%). The three most frequently used AM were amoxicillin/clavulanic acid (8,4%), cefuroxime (8,3%) and cefazolin (8%). The most common types of AM used were amoxicillin with beta-lactamase inhibitors (14.1%), fluoroquinolones (8.4%) and second-generation cephalosporins (8.3%). Most AM were prescribed for community acquired infections (45.6%) followed by hospital acquired infections (17.1%). In total, 33% of AM prescriptions were prophylactic, consisting of 43% surgical prophylaxis and 57% medical prophylaxis. The duration of the surgical prophylaxis was a single dose in 39%, one day in 34% and more than one day in 27% of the prescriptions. Overall, 29.4% of patients got a targeted treatment, among which 3.4% received an antibiotic targeting a multidrug resistant organism. An ESBL-producing Enterobacteriaceae was the most often reported cause (1.6%). From the antibiotic use quality indicators, the reason to start an AM was registered in 87% of prescriptions. Compliance to the guidelines was observed in 74% of the cases and non-compliance in 17% (in 9% it was not assessable). The stop date was registered in 54% of the prescriptions.

Most common types of antimicrobials

Duration of surgical prophylaxis

- Single dose
- One day
- More than one day

Total=100%
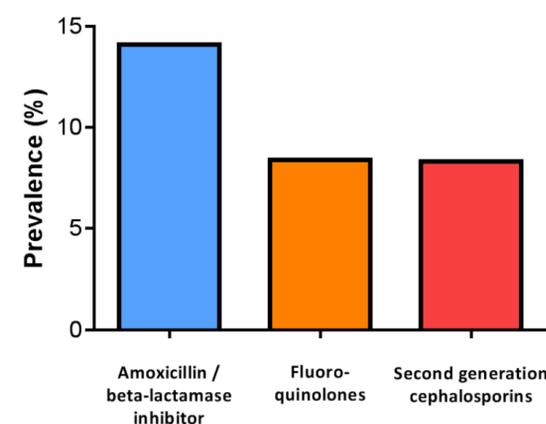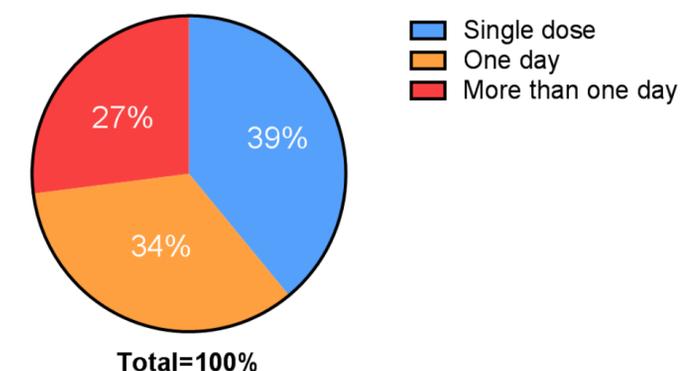
CONCLUSION

This survey on antibiotic use was successfully conducted in 8 hospitals in the Netherlands. The first results indicate a 33% prevalence of AM with beta-lactams and fluoroquinolones being the most frequently used groups. Compliance to guidelines was relatively high (74%). The duration of surgical prophylaxis was more than one dose in the majority of cases, which seems the most important target for improvement of the quality of antimicrobial use. The results of the PPS can be used as a foundation for future antibiotic stewardship interventions.