NO IMPACT OF ELECTRONIC ALERTS ON PARENTERAL PRESCRIPTION OF ANTIMICROBIALS WITH GOOD BIOAVAILABILITY

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Objectives: Antimicrobials with excellent bioavailability should be prescribed by the enteral route unless the gastrointestinal tract is not functioning. We aimed to retrospectively assess the impact of electronic alerts on the proportion of prescriptions for the parenteral form of seven antimicrobials.

Methods: Geneva University Hospitals are an academic healthcare system with about 1900 beds in Geneva, Switzerland. In the first quarter of 2010 a simple alert system was implemented in the in-house computerized physician order entry system (CPOE) that is used in all inpatient wards except the intensive care units. Upon prescription of the parenteral form of one of seven antimicrobials with excellent bioavailability in the CPOE - ciprofloxacin, levofloxacin, clindamycin, clarithromycin, cotrimoxazole, metronidazole and fluconazole - an alert appeared suggesting the oral alternative for prescription. No restrictions or feedback were implemented in conjunction with the alerts and the alerts could be easily rejected without need for a justification. The proportion of the parenteral form of all prescriptions of the concerned antimicrobials were analyzed by quarter between the first quarter of 2009 and the fourth quarter of 2012. Amoxicillin and amoxicillin/clavulanate prescriptions were also analyzed as controls. Changes in slope and intercept of the proportion of the parenteral form of each antimicrobial before and after the implementation of the alerts were assessed by segmented regression analysis.

Results: Over the study period there were between 3578 (clindamycin) and 21957 (metronidazole) prescriptions for the antimicrobials with an implemented alert. The percentage of parenteral prescriptions varied between 4.4% (cotrimoxazole) and 53.5% (metronidazole). There was no significant change in slope or intercept in the percentage of parenteral prescriptions for any antimicrobial (intervention and control) after implementation of the alerts (figure).

Conclusion: Implementation of alerts into CPOE did not have any impact on parenteral prescribing of antimicrobials with good bioavailability. Further analysis is required to assess the proportion of prescriptions where the parenteral route was truly unnecessary and whether a refined algorithm for the alert system - by also taking into account the route non-antimicrobial prescriptions – and additional interventions (e.g. feedback) are indicated.