Optimizing Antibiotic Prescribing in Elderly Inpatients

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BACKGROUND

Elderly inpatients are at high risk of harm from prolonged antibiotic therapy, including adverse reactions, Clostridium difficile infection, and antimicrobial resistance. On the Care of the Elderly (COTE) wards at Lister Hospital, courses frequently exceeded guideline-recommended durations.

AIM

To reduce inappropriate antibiotic durations in patients ≥65 years using the Plan–Do–Study–Act (PDSA) methodology.

METHODS

- **Primary outcome measure: length of antibiotic courses; prolonged course defined as >10 days of a single antibiotic without microbiology input**
- **Secondary outcome measures:** documentation of the antibiotic duration on ePMA, appropriate IV-to-oral switch, C diff diarrhoea prevalence
- **Exclusion criteria:** deep seated infections
- **Intervention:**
    1. Teaching seminar on guideline-recommended durations of antibiotic treatment
    2. Knowledge-assessment questionnaire
    3. Ongoing email reminders

MEASURE	BEFORE INTERVENTION	AFTER INTERVENTION	p-value
Antibiotic prescriptions with set duration on ePMA	20%	76%	<0.0001
Prolonged courses in the cohort	16%	2%	<0.0001
Appropriate IV to oral switch	0%	45%	0.047

RESULTS

Data were collected for 60 patients at baseline and for 58 patients' post-intervention; of these, 44 and 42 patients, respectively, were receiving antibiotics. Co-amoxiclav accounted for over 50% of prescriptions in both groups. Following the intervention, practice of prescribing antibiotics with a set duration on EPMA improved by 56% (**Figure 1**) and this was associated with a 14% absolute reduction in patients receiving unnecessarily prolonged courses (**Figure 2**).

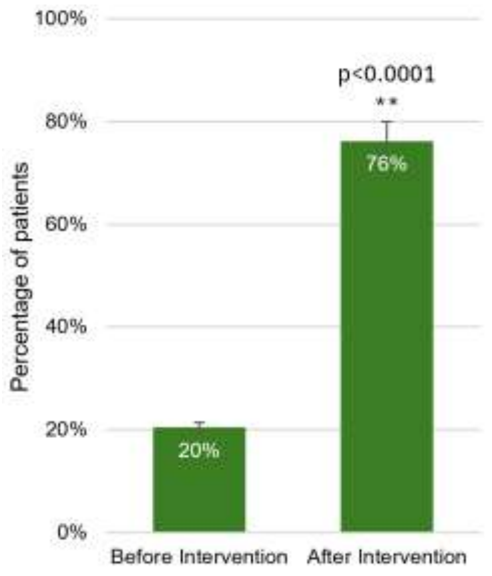

Figure 1: **Percentage of patients with limited duration of antibiotics prescribed on ePMA, before and after the intervention.** Correct prescribing practice increased from 20 to 76% (p<0.0001).

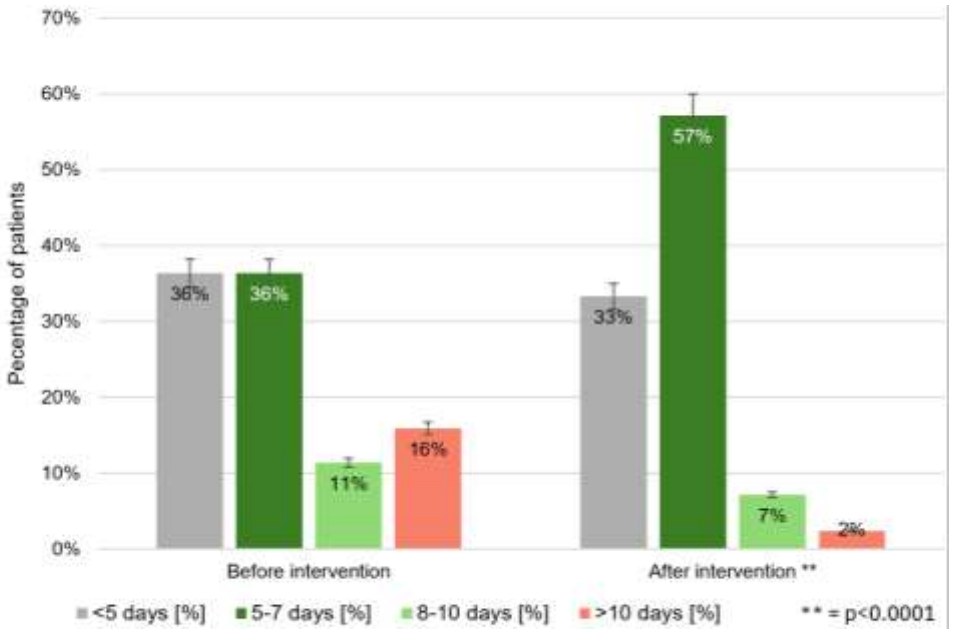

Figure 2: **Cohorts before and after the intervention divided into groups by the duration of received antibiotic courses.** Percentage of patients receiving prolonged courses >10 days decreased from 16% to 2% and percentage of patients with expected duration of 5-7 days increased from 36% to 57%.

CONCLUSION

A targeted, low-cost education and reminder strategy significantly reduced prolonged antibiotic prescribing in elderly inpatients. Simple, focused interventions can deliver meaningful improvements in antimicrobial stewardship and patient safety. Sustained benefit will require ongoing education and reinforcement.