Are patients admitted to AAU prescribed antibiotics with an appropriate duration and indication?

Maithili Varadarajan(FY2), Joshua York (FY2), Jennifer Ansett (FY2) and Nithusa Rahunathan (FY1), Gavin Barlow

Introduction

Trainees prescribing antibiotics in AAU are often not fully aware of the most appropriate antibiotic to give, or how long a course should be for a given condition. Despite recommendations being made both on the drug card and in trust guidelines, these are often not followed, and the duration is not always stated. Antibiotic stewardship is imperative and prescribing the correct antibiotics for the appropriate duration is important both for the outcomes of the patients involved but also more widely to the trust; e.g. to prevent antibiotic resistance and reduce hospital admission length. The aim of the project is to improve the quality of antibiotic prescription in AAU.

Methods

A random sample of 50 patients admitted to AAU at Hull University Teaching Hospital (HUTH) and prescribed antibiotics was initially reviewed. A Stickman poster based on the key areas from these initial data was created using trust guidelines and was emailed to juniors and consultants. The Stickman was also placed in key areas in AAU. Data on 10 patients was recollected after 2 weeks and results were emailed with the Stickman to medical staff working on AAU. The pharmacists working on AAU were also prompted to encourage juniors to use the Stickman to aid prescribing in AAU. Data was then recollected from 53 patients after 3 weeks.

Figure 1 to show the stickman intervention poster:

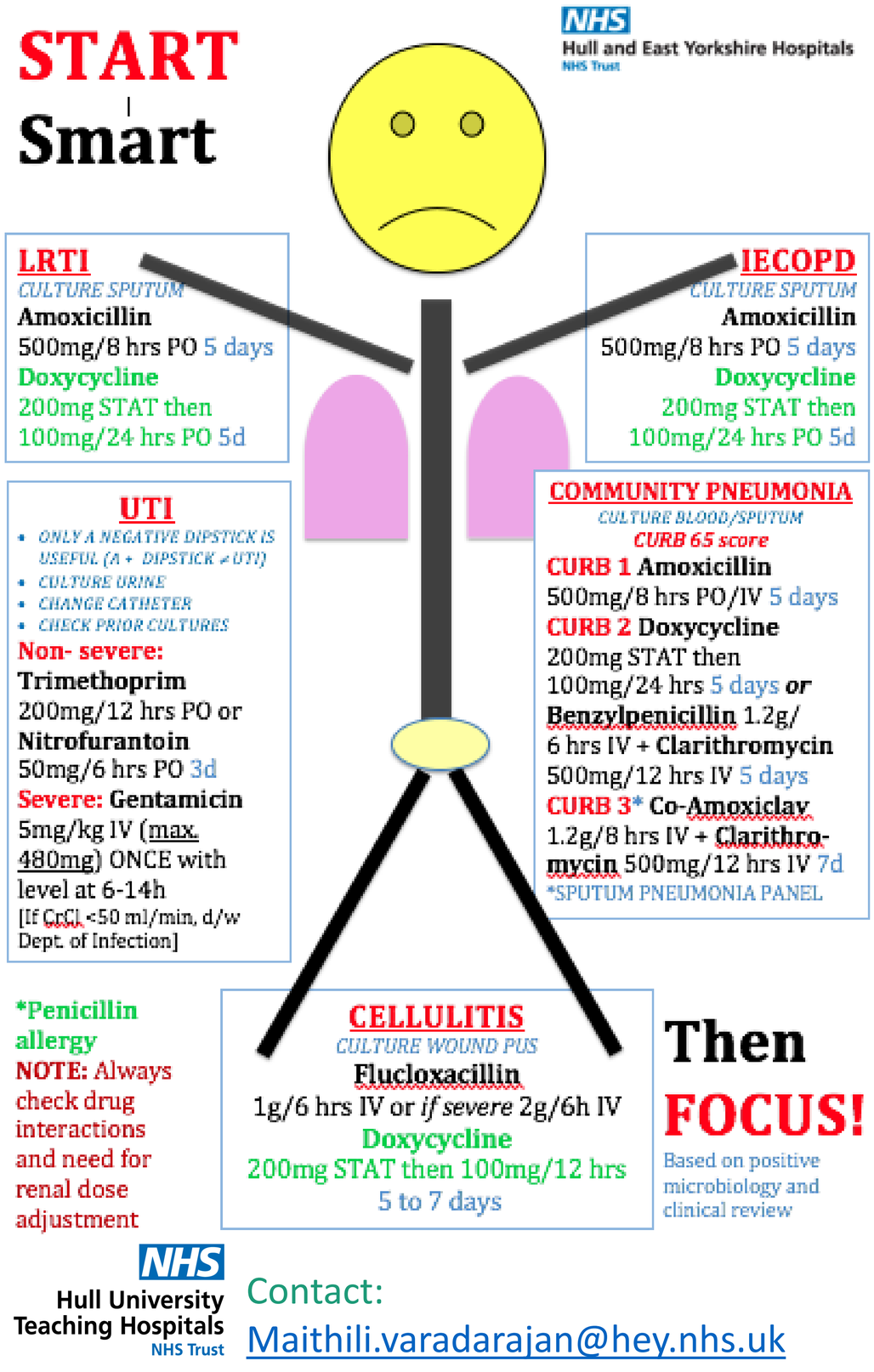

Table 1 Comparison of antibiotic prescriptions initially, 2 weeks later and 5 weeks after the introduction of the Stickman:

Criteria	Pre-intervention (% of patients, N = 50)	Post-intervention 1 (% of patients, N = 10)	Post-intervention 2 (% of patients, N = 53)
Indication stated	94	100	92
Duration stated	94	100	96
Appropriate antibiotics for indication prescribed	60	70	62
Appropriate duration for indication prescribed	46	50	64

Results

Appropriateness of prescribing did not improve (see Table 1); at baseline and post-intervention 60% and 62% of prescriptions, respectively, had an appropriate antibiotic prescribed. In contrast, initially 46% of prescriptions had antibiotics prescribed for an appropriate duration, which rose to 64% post-intervention.

The four key conditions identified for improvement after initial data collection were lower respiratory tract infection (LRTI), pneumonia, infective exacerbation of COPD (IECOPD) and cellulitis. These were therefore included on the Stickman poster. When stratified by specific indications, prescriptions for the two commonest indications (LRTI and Pneumonia) improved; with both having more appropriate antibiotic choices and durations (see Table 2).

Table 2 Comparison prescriptions for the top four most common indications:

	Initial data collection (N = 50)			Recollection (N = 53)		
Indication	Percentage of patients prescribed appropriate antibiotics (%)	Percentage of patients with a duration stated (%)	Percentage of patients prescribed with an appropriate duration of antibiotics (%)	Percentage of patients prescribed appropriate antibiotics (%)	Percentage of patients with a duration stated (%)	Percentage of patients prescribed with an appropriate duration of antibiotics (%)
LRTI	56	89	61	60	100	70
Pneumonia	55	91	45	88	100	81
IECOPD	100	100	75	100	100	0
Cellulitis	67	100	17	71	86	57

Discussion

Our results suggest some early improvement in antibiotic prescription indices following implementation of a visual Stickman poster. This was especially true for LRTIs and pneumonia. The overall improvement in antibiotic choice was small, however, but only one cycle of feedback was employed. Real-time audit and feedback is known to improve antimicrobial prescribing but can be difficult to sustain in real-life practice and requires multiple cycles. There is a need to develop systems to achieve such regular feedback with minimal human resource implications. The underlying reasons for non-adherence also need to be understood better. Stickman could prove a useful visual representation for further antibiotic guidelines, QIPs, e-applications, etc. at HUTH.

NHS
Hull University Teaching Hospitals
NHS Trust

Contact:
Maithili.varadarajan@hey.nhs.uk