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ePoster Viewing

Pharmacoepidemiology, improved prescribing and antibiotic stewardship

Antimicrobial stewardship interventions in *Clostridium difficile* infections

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Background: *Clostridium difficile*-infections (CDI) are difficult to manage and contribute to significant patient morbidity and mortality. Inappropriate adherence to guideline-driven CDI therapy can lead to poor patient outcomes and increased healthcare expenditure. We describe the management and outcomes of CDI before and after the implementation of an antimicrobial stewardship program intervention (ASPI) that included guidelines, education and prospective audit with feedback.

Materials/Methods: This was a retrospective quasi-experiment that included hospitalized patients with CDI from 8/2013 to 1/2014 (pre-ASPI) and 5/2014 to 10/2014 (post-ASPI). Inclusion criteria were: i) age \geq 18 years and ii) clinically and microbiologically confirmed CDI after admission.

Results: 259 patients were included: 148 pre-ASPI, 111 post-ASPI. The majority of CDI-cases in either group were classified as severe (Table 1) based on predetermined collected variables. Sixty-eight percent of patients in either group were exposed to an inpatient antibiotic prior to CDI for a median duration of 2 days (IQR: 2-6). Positive CDI enzyme immunoassay: pre-ASPI 78 (53%), post-ASPI 50 (45%); positive polymerase chain-reaction: pre-ASPI 70 (47%), post-ASPI 61 (55%). Initial drug selection based on severity of disease guidelines was appropriate in: pre-ASPI 68 (47%), post-ASPI 62 (56%), $p = 0.13$. An infectious disease specialist was consulted for management in: pre-ASPI 46 (31%), post-ASPI 44 (40%). Fecal transplants were performed in: pre-ASPI 10 (7%), post-ASPI 13 (12%). In the post-ASPI group, 113 CDI-related interventions were made in 73 (66%) patients, with an acceptance rate of 73%. The most common interventions were: discontinuation of unnecessary proton-pump inhibitor (34%), antimicrobial de-escalation (18%) and initial CDI therapy change (18%). Twelve-week CDI reinfection was similar between pre-ASPI and post-ASPI (8% v. 11%, $p = 0.53$).

Conclusions: Appropriate selection of initial CDI therapy was not different between pre- and post-ASPI. The most common ASPI was discontinuation of unnecessary proton pump inhibitors.

Table 1: CDI characteristics	Pre-ASPI <i>n</i> = 148		Post-ASPI <i>n</i> = 111		
	<i>n</i> (%)	Initial drug selection compliance <i>n</i> (%)	<i>n</i> (%)	Initial drug selection compliance <i>n</i> (%)	<i>p</i>
Disease classification					
Mild-moderate	60 (41%)	28 (47%)	45 (41%)	23 (51%)	0.72
Severe	85 (57%)	38 (45%)	64 (58%)	38 (59%)	0.59
Recurrent	5 (3%)	3 (60%)	3 (3%)	2 (67%)	1.0
30-day follow-up					
In-hospital CDI-death		13 (9%)		3 (3%)	
All-cause death		5 (4%)		3 (3%)	
No readmission, retreatment		68 (53%)		58 (54%)	
Non-CDI related readmission		25 (19%)		23 (21%)	
CDI-related readmission		11 (9%)		11 (10%)	
No follow-up		17 (13%)		12 (11%)	