

H. Benoist¹, A. Flatres¹, G. Saint-Lorant¹

1. Service de pharmacie, centre hospitalier universitaire de Caen, Caen Cedex 9, France
hubertbenoist@gmail.com

The implementation of an **antimicrobial stewardship program (ASP)** within an hospital makes it possible to reduce significantly the incidence rate of *Clostridioides difficile* infections (CDI) but a post-prescription review with feedback is time-consuming in the long-term. In 2014, CDI-relapse rate of 30% was observed in a preliminary study in our Hospital.

Objective



The aim of this study is to **evaluate acculturation of prescribers to recommendations** on the management of CDI two years after an ASP including an education program

Methods

This study included all consecutive cases of toxigenic CD positive tests in a university hospital (1500 beds).

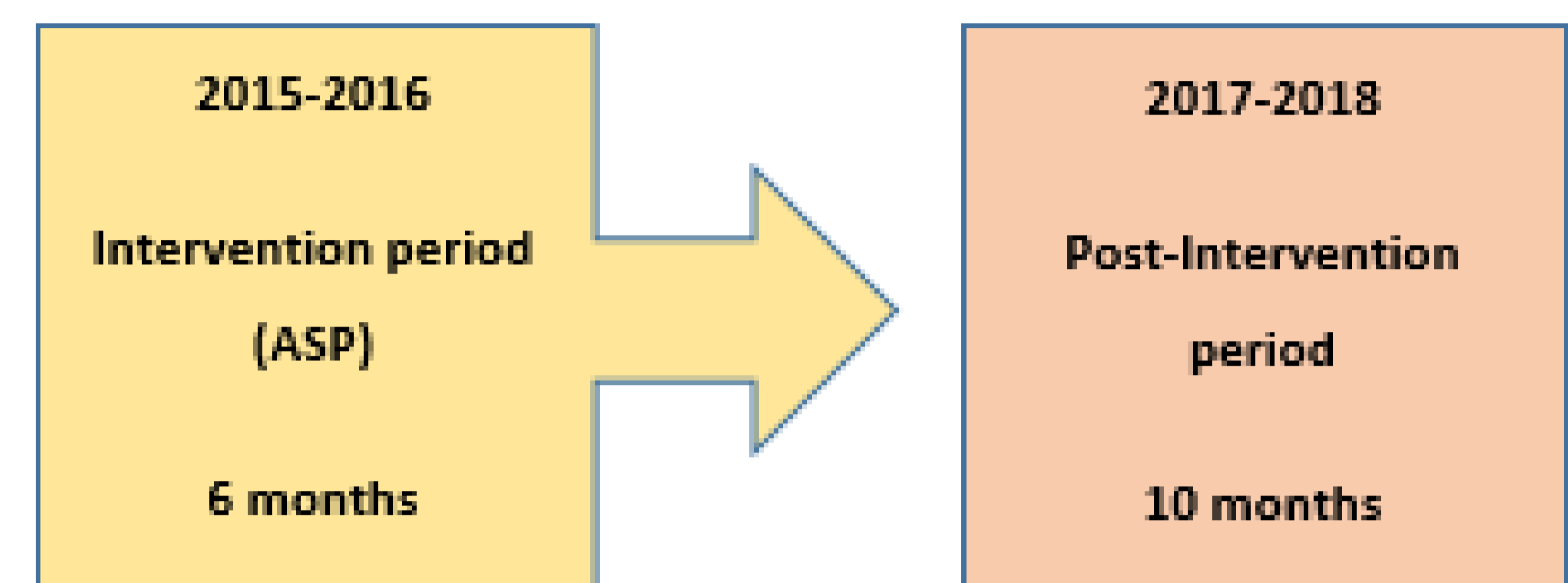
We collected information on:

- Demographic characteristics
- Gravity and relapse risk factors
- Therapeutic risk factors
- Treatment compliance with protocol
- Outcomes

In the ASP (Intervention period): all cases were reviewed by a multidisciplinary panel of experts including an infectious disease specialist and a pharmacist in order to have a complete overview of patient records in each area of expertise, to determine good treatment.

Following of ASP: at each arrival of a new medical resident (every 6 months), a CDI management reminder during a general session on antimicrobials.

In the post-intervention period: pharmacist follows CDI cases management and if necessary reminds first-prescriber of CDI management.



Patient characteristics

Variable, n (%)	Intervention period (N=71)	Post-intervention period (N=52)	p-value
Demographic characteristics			
Sex, male	25 (35.2)	25 (48.1)	0.15
Age, years, median (IQR)	68 [19-94]	67 [22-98]	0.34
Ribotype 027	1 (1.4)	0 (0)	0.39
First episode	57 (80.3)	44 (84.6)	0.53
Risk factors			
Gravity risk factors	13 (18.3)	11 (21.1)	0.69
Relapse risk factors	65 (91.5)	44 (84.6)	0.23
Relapse risk factors			
Age > 65 years	44 (62)	30 (57.7)	0.63
Severe comorbidity	46 (64.8)	38 (73.1)	0.33
Immunosuppression	29 (40.8)	12 (23.1)	0.04
Undernutrition	34 (47.9)	21 (40.4)	0.4
ICU admission before diagnosis	5 (7)	7 (13.5)	0.23
Therapeutic risk factors at the time of lab CDI result			
Antibiotic	38 (53.5)	26 (50)	0.7
Continuing antibiotic	24/38 (63.2)	20/26 (76.9)	0.24
Proton pump inhibitor	37 (52.1)	22 (42.3)	0.28
Inhibitor of transit	28 (39.4)	11 (21.1)	0.03
Treatment conformity with protocol			
Initial treatment	17 (23.9)	35 (67.3)	< 10 ⁻³
After-intervention treatment	62 (87.3)	46/47 (97.8)	0.04

Results

No difference was observed between periods except for immunosuppression.

Inhibitor of transit prescription has significantly decreased (p=0.03).

Compliance with the institutional protocol improves significantly between the two periods (23.9%) vs (67.3%) (p < 10⁻³)

Significant difference was observed after intervention treatment (87.3%) vs (97.8%) (p=0.04).

Outcomes

Variable, n (%)	Intervention period (N=71)	Post-intervention period (N=52)
Recovery at 10 days	57/63 (90.5)	36/38 (94.7)
Relapse at 2 months	8/56 (14.3)	5/37 (13.5)
Death at 2 months	13 (18.3)	14 (26.9)

Conclusions

This study shows the **success of education in ASP by acculturation of prescribers** to recommendations even long after the implementation of ASP. These actions made it possible to reach good recovery rate and reduce the relapse rate **for a good management of CDI in the long-term.**

