INTRODUCTION AND PURPOSE

We previously reported that a high percentage of cases of candidemia were caused by clusters of Candida albicans and Candida parapsilosis (Clin Microbiol Infect. 2015 Jul;21(7):677-83). The presence of clusters (identical genotypes infecting different patients) suggests patient-to-patient transmission or a common source of the strains. The exogenous transmission route has clinical interest in terms of the control of hospital-acquired infections. Cather-related candidemia is a major source of nosocomial candidemia and the implementation of educational programs is recommended to decrease its incidence. In January 2013, we implemented an antifungal stewardship program and a campaign to reduce catheter-related infections in the hospital. We subsequently observed a decrease in the number of candidemia episodes caused by C. albicans and C. parapsilosis. We analyzed here whether this reduction was accompanied by a decrease in the percentage of patients involved in the clusters.

MATERIAL AND METHODS

434 patients with candidemia admitted to Gregorio Marañon Hospital January 2007-December 2014

Incident isolates

C. albicans (n=279)

C. parapsilosis (n=155)

Molecular identification ITS1-5.8s-ITS2

Genotyping with species-specific microsatellite markers

RESULTS

The number of episodes detected in the pre-campaign period was higher than in the post-campaign period; however, the percentage of episodes caused by clusters was significantly lower in the post-campaign period (P<0.001).

Figure 1. Number of genotypes and clusters found, and percentage of patients in cluster.

Figure 2. Distribution of patients with candidemia infected by C. albicans and C. parapsilosis isolates during each year of the study period. Number of episodes caused by cluster genotypes and percentage of patients in clusters are shown.

CONCLUSION

- We found that the reduction in the percentage of episodes of candidemia caused by C. albicans and C. parapsilosis was accompanied by a decrease in the percentage of episodes caused by clusters.

- Our observations suggest that implementation of a campaign to reduce the number of catheter-related infections leads to better control of nosocomial candidemia.

Linear regression analysis showed a positive correlation between the overall number of candidemia cases and the cases caused by clusters (r=+0.89).