

## Appropriateness of Therapy and Cost Analysis in the Treatment of Systemic Fungal Infections in a Transplant Center - DGI-014

I. Casucci, A. Provenzani, P. Polidori: Clinical Pharmacy Department - ISMETT, Palermo - Italy

### Background and Purpose

Invasive fungal infections (IFI) increase morbidity and mortality in immunocompromised patients (IP). Controlling antifungal use is fundamental in avoiding drug resistance and containing costs. Our goals were to identify risk factors associated with IFI in IP, and monitor appropriateness and cost of antifungal therapy.

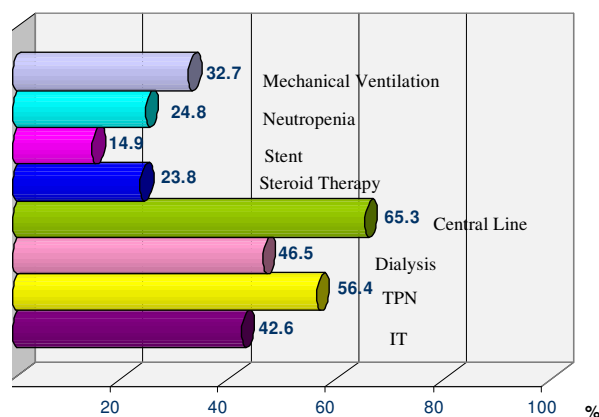
### Materials and Methods

A retrospective analysis was done at ISMETT, a 78-bed transplant center in Palermo, Italy, from January 1 to December 31, 2010. One hundred one IP received antifungal intravenous therapy with fluconazole (F), liposomal amphotericin-B (A), caspofungin (C), itraconazole (I) for 4 or more days. Patient therapy was divided into three groups: prophylactic, empirical and target. Immunosuppressive therapy (IT), total-parenteral-nutrition (TPN), dialysis, central line, steroid therapy, stent use, neutropenia, and mechanical ventilation were evaluated. Variables were therapy duration, DDD consumption (defined-daily-dose), and DDD average cost.

### Results

Main risk factors were central line (65.3%), TPN (56.4%), dialysis (46.5%), IT (42.6%), mechanical ventilation (32.7%), neutropenia (24.8%), steroid therapy (23.8%), and stent use (14.9%). Average duration of prophylactic therapy was 7 days, F (61%), A (26%), C (13%) were used. Average duration of empirical therapy was 8 days, and F (52.9%), A (26.5%), C (8.8%), I (2.9%), and in association A+C, A+F, C+F (8.9%) were used. Average duration of target therapy was 9 days, and F (40.4%), A (23.1%), C (15.4%), I (7.7%), and in association A+C, A+F, C+F (13.4%) were used. DDD consumption and DDD average cost were, respectively, C 50mg vial: 273 DDD, €381.1; C 70mg vial: 33.6 DDD, €389.6; F 200mg vial: 768 DDD, €11.8; F 100mg vial: 89 DDD, €10.6; I 250mg vial: 62.5 DDD, €68.8; and A 50mg vial: 2200 DDD, €93.4.

### Risk Factors



Product	Grams/unit dose	unit doses/package	Antifungal	ATC code	Adm route	DDD (WHO 2008) U	Unit	DDD/package	packages	grams	DDD
<i>CANCIDAS®</i>	0.05	1	Caspofungin	J02AX04	P	0.05	g	1.0	273	13.7	273.0
<i>CANCIDAS®</i>	0.07	1	Caspofungin	J02AX04	P	0.05	g	1.4	24	1.7	33.6
<i>DIFLUCAN®</i>	0.2	1	Fluconazole	J02AC01	P	0.2	g	1.0	768	153.6	768.0
<i>DIFLUCAN®</i>	0.1	1	Fluconazole	J02AC01	P	0.2	g	0.5	178	17.8	89.0
<i>SPORANOX®</i>	0.25	1	Itraconazole	J02AC02	P	0.2	g	1.3	50	12.5	62.5
<i>AMBISOME®</i>	0.05	10	Amphotericin	J02AA01	P	0.035	g	14.3	154	77.0	2200.0

### Conclusions

Data showed an appropriate use of antifungals. The best therapy alternative (cheaper antifungal) was prescribed for most patients. The high cost of A and C was justified by IFI resolution.

