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Antifungal stewardship programme in a tertiary university hospital in Italy: a focus on candidaemia

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Background: Antifungal Stewardship Programs (ASP) are one of the tools aimed to optimize the use of antimicrobial agents to get better clinical outcomes. The incidence of candidemia is growing and is a major cause of mortality and morbidity in hospitalized patients. In this paper we assess the results of an ASP, in the year 2012-2014.

Material/methods: All consecutive patients who developed candidemia in Pisa University Hospital (January 2012-December 2014), were enrolled in the study. We analyzed the underlying patient characteristics, survival and risk factors, detailed information about clinical illness, infectious disease consultations (IDC), antifungals prescriptions and outcome during candidemia episodes.

Results: We collect 341 episodes of candidemia. Demographics, main clinical characteristics, antifungal therapy during candidemia and outcome of study population are summarized in Table 1. Regarding 30-day mortality, at the univariate regression analysis, the significant predictors of death are: age > 65 years (OR 2.253, 95% CI OR 1.343-3.782, p 0.002), Late onset of candidemia (OR 0.539, 95% CI OR 0.340-0.855, p 0.009), presence of C. *albicans* (OR 1.702, 95% CI OR 1.077-2.689, p 0.023), and IDC (OR 0.500, 95% CI OR 0.296-0.847, p 0.010). At the multivariate regression analysis, age > 65 years (OR 2.152, 95% CI OR 1.259-3.667, p 0.005) and IDC (OR 0.520, 95% CI OR 0.298-0.906, p 0.021) emerged as independent predictors of death.

Conclusions: Antifungal stewardship seems to be a protective factor for mortality due to Candidemia. In fact, at the univariate logistic regression model regarding 30-day mortality and at the multivariate analysis IDC was the factor associated to increased survival, while age>65 years is associated with increased death.

Table 1: Clinical characteristics, therapy and outcomes of study population.

Variables	Patients (n=341)	No IDC (n=239)	IDC (n=102)	*P*
Age > 65 years	229/341 (67.2%)	167/239 (69.9%)	62/102 (60.8%)	0.131
Admission in Surgery / Intensive care unit	140/341 (41.1%)	84/239 (35.1%)	56/102 (54.9%)	0.001
Hospital stay (days)	25 [11.5-47]	19 [9-38]	38 [24–66.25]	<0.001
Candida albicans	181/341 (53.1%)	110/239 (48.7%)	71/102 (61.7%)	0.030
Azole	132/341 (38.7%)	80/239 (33.5%)	52/102 (51.0%)	0.004
Echinocandins	87/341 (25.5%)	40/239 (16.7%)	47/102 (46.1%)	<0.001
Amphotericin-B	13/341 (3.8%)	2/239 (0.8%)	11/102 (10.8%)	<0.001
Δ-Time from positive blood culture to death(days)	6 [2-11]	5 [2-9]	10 [2–19]	<0.001
30-day mortality	115/341 (33.7%)	91/239 (38.1%)	24/102 (23.5%)	0.013