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Abstract (oral session)

Fluconazole consumption and the emergence of *Candida glabrata*

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Background: *Candida* spp. are emerging pathogens causing nosocomial infections. Fluconazole has been increasingly used to treat and prevent *Candida* infections, since it has an excellent safety profile and low cost. However, exposure to fluconazole can lead to selection of reduced susceptibility or fluconazole-resistant species, such as *Candida glabrata* and *Candida krusei*, at the individual patient level. The association between fluconazole usage and emergence of resistant species at a hospital level remains controversial. Objective: To evaluate the relationship between fluconazole consumption and the distribution of *Candida* species recovered from clinical samples over time. Study design: Ecological study. Methods: The study was conducted at Hospital Nossa Senhora da Conceição, a 900-bed tertiary hospital in Southern Brazil. All *Candida* spp. isolates (all clinical samples) between 2006 and 2011 were identified through the records of the microbiology lab. Data concerning fluconazole consumption, either orally or intravenously, were retrieved from the hospital pharmacy service for the period 2006–2011 and described in terms of defined daily doses (DDDs). Incidence figures for different species of *Candida* and fluconazole consumption are described per 1000 patient-days. Pearson's correlation coefficient was used to assess the relationship between *Candida* spp. incidence and fluconazole consumption. Results: During the study period 1701 isolates of *Candida* spp. were studied (248 in blood, 1133 urine, 125 peritoneal fluid and 195 other sites). The incidence of candidaemia varied from 0.19 to 0.23 per 1000 patient days. During the period of the study, fluconazole consumption increased from 12.77 to 50.94 DDD per 1000 patient days ($p < 0.001$). The recovery of *Candida glabrata* was strongly correlated to fluconazole consumption (Pearson's correlation coefficient=0.942, $p=0.005$), as seen in the scatter plot (graphic). The frequency of other species of *Candida*, or non-*C. albicans* species as a group, were not linked to fluconazole consumption. Conclusion: Increased fluconazole consumption was associated with a change in *Candida* ecology, with the emergence of *Candida glabrata* amongst clinical isolates.

