

NOSOCOMIAL INVASIVE CANDIDIASIS IN SAINT-PETERSBURG, RUSSIA



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Introduction

Invasive candidiasis (IC) is the most common nosocomial invasive fungal infection. Local epidemiological data are still limited.

Methods

The prospective multicenter (n=6) study in 2011-2015 yy. Diagnosis of IC was made according to EORTC/MSG criteria (2008).

Results

We observed 94 patients with IC, the median age was 53 y. (range 38,5 ± 6,5), females - 52%. The frequency of IC was 0.3 per 1,000 hospitalized patients (13/44423), confidence interval the angular conversion Fischer – 0,16 ± 0,47. IC developed at 2 - 162 days after admission to hospital, median – 21 (13±35). Main underlying conditions were: oncology – 32%, abdominal and thoracic surgery – 26%, trauma and burns – 15%. Main risk factors were: central venous catheters (CVC) – 91%, broad spectrum antibiotics – 86% mechanical ventilation – 66%, surgery in the previous 2 week – 56%.

The main clinical variants were candidemia (83%), peritonitis (12%), endocarditis (4%), and meningitis (3%). Clinical signs and symptoms were fever ≥ 38,50 C (45%) or a decrease < 36,00 C (3%) and respiratory failure (46%). Median APACHE score II was 15 (13±29). Diagnosis was confirmed by blood culture – 83%, other normally sterile substrates culture – 30%, and histology – 3%. *Candida albicans* was isolated in 39% cases, *C. parapsilosis* – 27%, *C. glabrata* – 12%, *C. krusei* – 6%, *C. tropicalis* – 4%, *C. dubliniensis* – 1%, *C. guilliermondii* – 1%, *C. lusitaniae* – 1%, *C. famata* – 1%, *Candida* spp.- 8% (Fig.1).

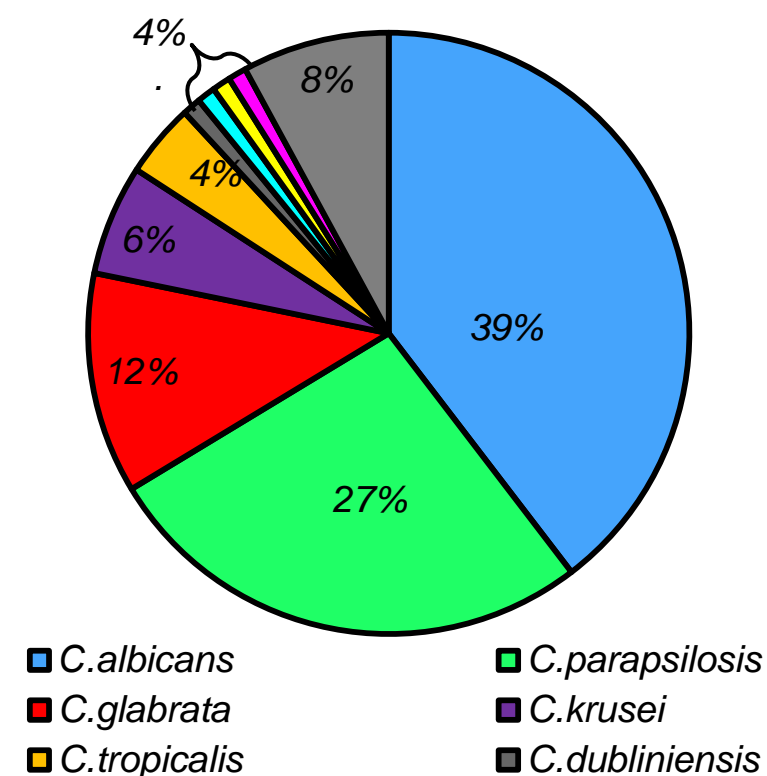


Fig. 1. Etiology of invasive candidiasis

Early (<24 h) CVC removal was in 23% patients, late – 11%. Antifungal therapy was used in 81% patients (fluconazole – 80%, echinocandins – 29%, voriconazole – 20%, lipid amphotericin B – 15%, amphotericin B deoxycholate - 5%). Antifungal treatment was used early (<24 h) in 45% patients. The duration of antifungal therapy was 1 – 260 days, median – 15 (8÷29). Overall survival in 30 days was 55% (Fig.2).

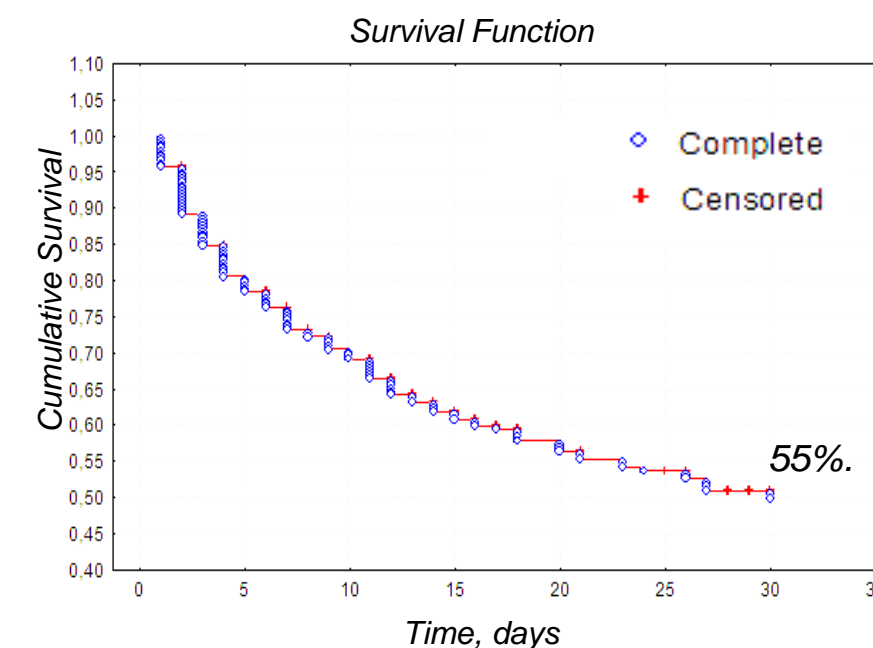


Fig.2. Overall survival in 30 days.

Early (<24 h) CVC removal and antifungal treatment increased survival rate (p<0,05) (Fig.3, 4).

Conclusions

The frequency of IC was 0.3 per 1,000 hospitalized patients. Main risk factors were central venous catheters – 91%, broad spectrum antibiotics use 86%, mechanical ventilation – 66% and surgery in the previous 2 weeks – 56%. Main etiology agents were *C. albicans* – 40%, *C. parapsilosis* – 27%, *C. glabrata* – 12%, *C. krusei* – 6%, and *C. tropicalis* – 4%. The main clinical variants were candidemia (83%) and peritonitis (12%). Overall survival in 30 days was 55%. Early (<24 h) central venous catheters removal and antifungal treatment are needed for increasing survival rate.

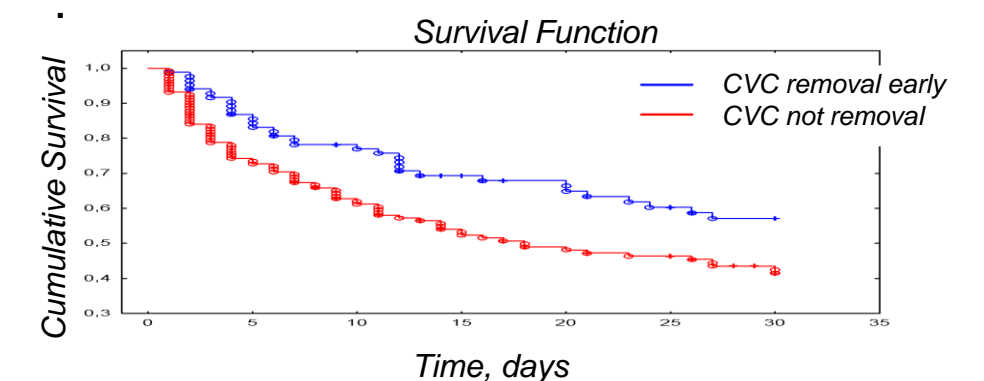


Fig.3. Overall survival in 30 days in ptns with/without early (<24 h) central venous catheters removal

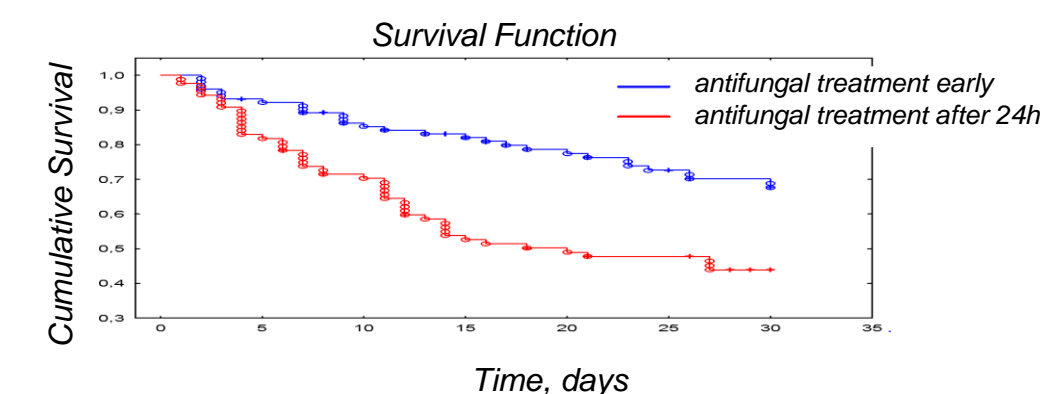


Fig.4. Overall survival in 30 days in ptns with/without early (<24 h) antifungal treatment