1777. Corticosteroid Use Following the Onset of Invasive Aspergillosis is Associated with Increased Mortality: A Propensity Score-Matched Study

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Background. The safety of corticosteroid use (CSU) during active infection is controversial. In the invasive aspergillosis (IA) literature, CSU is typically defined using the time period prior to IA onset. Clinicians caring for patients with IA are unable to control prior CSU. The more clinically relevant question is whether CSU after IA onset is harmful.

Methods. Patients hospitalized at our institution from 2004 to 2014 with IA were retrospectively identified. CSU, defined as the average daily prednisone equivalent dose during the 7-day period following the IA onset, was calculated for each patient. A CSU cut-off of 7.5 mg was used to assign patients to treatment (>7.5 mg) or control (<7.5 mg, including no CSU) groups. A propensity score (PS) was generated to predict group assignment. Nearest neighbor matching was performed with a caliper width of 0.2. A Cox proportional hazards model was used to assess survival 6 weeks after IA onset.

Results. PS matching generated 61 matched pairs (122 patients). Baseline characteristics did not differ significantly between groups (Table). CSU was associated with increased mortality (PS adjusted hazard ratio [HR] 2.91, 95% CI 1.32–6.40). In the CSU group, a trend towards lower mortality was noted if corticosteroid dose was tapered to 7.5 mg/day (HR 0.68, 95% CI 0.46–1.02).

Conclusion. CSU after IA onset is associated with increased mortality. In IA patients with CSU, efforts to reduce corticosteroid dose may be beneficial.

Table: Propensity matched patients at IA Onset

	CSU (n = 61)	Control (n = 61)	P
Age, years	57.6 (49.2–65.9)	53.2 (42.5–63.2)	.27
Male	59.0% (36/61)	54.1% (33/61)	.72
CSU >7.5 mg prior to IA	78.7% (48/61)	70.5% (43/61)	.41
Leukemia	52.5% (32/61)	49.2% (30/61)	.86
Allogeneic bone marrow transplant	26.2% (16/61)	29.5% (18/61)	.84
Graft vs. host disease	3.3% (2/61)	11.5% (7/61)	.16
Neutropenia	48.3% (28/58)	42.9% (24/56)	.58
Solid organ transplant	11.5% (7/61)	6.6% (4/61)	.53
Obstructive lung disease	21.3% (13/61)	24.6% (15/61)	.83
Diabetes mellitus	26.2% (16/61)	29.5% (18/61)	.84
Pulmonary IA	94.8% (55/58)	94.9% (56/59)	.99
Coinfection	23.0% (14/61)	21.3% (13/61)	.99

Data presented as median (interquartile range) or % (n with feature/n with data available)

Figure.   Kaplan–Meier curves comparing 6-week survival
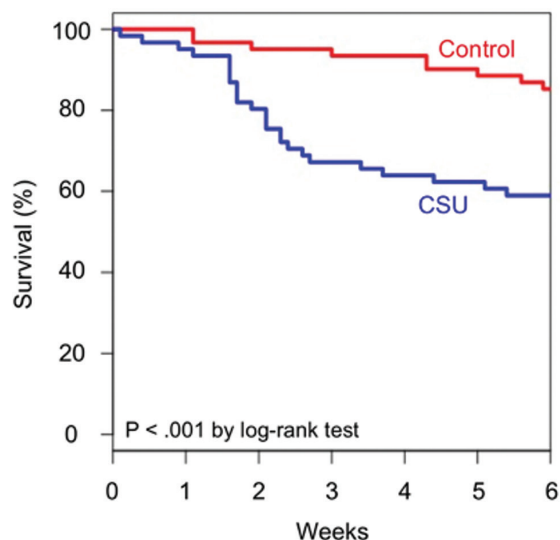
1778. Catheter-free Period Over 2 Days Is Associated with Better Outcome in Catheter-related Bloodstream Infection due to Candida

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Background. Regardless of active antifungal drugs, mortality of candidemia remains high. Although it is well-known that central venous catheter (CVC) is one of the most important risk factors of candidemia and should be removed immediately, little is known about optimal timing of CVC replacement after removal. Here, we analyzed contributing risk factors associated with 30-day mortality for catheter-related bloodstream infection (CRBSI) due to candida and optimal timing of CVC replacement.

Methods. We conducted a retrospective cohort study at St. Luke#129; fs International Hospital between 2004 and 2015. We compared each clinical component in patients who died within 30 days and were alive at 30 days. Also, catheter-free period (from removal to replacement) was compared between group A and B. Fisher#129; fs exact test and Mann–Whitney U test were used in univariate analysis and multivariate linear regression was used for controlling confoundings.

Results. Among 228 patients (pts) with candidemia, 166 patients (73%) were on CVC at diagnosis. Of them, 144 patients (65%) removed CVC after the result of candidemia. Seventy-one patients (31%) replaced CVC. Fifteen patients (6%) died within 30 days (group A) and 56 patients (25%) were alive at 30 days (group B). Median age was 74 in group A and 72 in group B (P = 0.331) (Table 1). In univariate analysis, hematological malignancy (OR 6.75, 95% CI 1.01–44.9) and CVC replacement < 2-days after removal (OR 5.63, 95% CI 1.16–27.3) showed statistically significant increase in group A vs group B (Table 2). In multivariate analysis, CVC replacement < 2-days was independently associated with 30-day mortality (Table 3).

Conclusion. This is the first study to demonstrate the optimal timing of CVC replacement in CRBSI due to candida. CVC replacement < 2 days was an independent risk factor for 30-day mortality.

Table 1. Patient demographics

	30-day dead (N=15)	30-day alive (N=56)	Overall	p value
Gender (male), n (%)	9 (60)	34 (60.7)	43 (60.6)	1
Age, median (IQR)	74 (67-84)	72 (63-82)	74 (65-82)	0.331
Malignancy, n (%)	7 (46.7)	20 (35.7)	27 (38)	0.552
Hematological, n (%)	3 (20)	2 (3.6)	5 (7)	0.06
Solid, n (%)	4 (26.7)	18 (32.1)	22 (31)	0.763
DM, n (%)	2 (13.3)	6 (10.7)	8 (11.3)	0.673
COPD, n (%)	0 (0)	3 (5.4)	3 (4.2)	1
Stem cell transplant, n (%)	1 (6.7)	2 (3.6)	3 (4.2)	0.515
Cirrhosis, n (%)	1 (6.7)	3 (5.4)	4 (5.6)	1
Hemodialysis, n (%)	4 (26.7)	9 (16.1)	13 (18.3)	0.452
Eye check, n (%)	14 (93.3)	55 (98.2)	69 (97.2)	0.38
Corticosteroid within 90 days, n (%)	3 (20)	6 (10.7)	9 (12.7)	0.387
Site of infection				
GI, n (%)	1 (6.7)	3 (5.4)	4 (5.6)	1
CLABSI/PLABSI, n (%)	14 (93.3)	52 (92.9)	66 (93)	1
Candida species, n (%)				
C. albicans	6 (40)	34 (60.7)	40 (56.3)	0.241
C. glabrata	4 (26.7)	7 (12.5)	11 (15.5)	0.228
C. parapsilosis	2 (13.3)	6 (10.7)	8 (113)	0.673
C. guilliermondii	1 (6.7)	2 (3.6)	3 (4.2)	0.515
C. tropicalis	2 (13.3)	7 (12.5)	9 (12.7)	1
Endophthalmitis, n (%)	4 (26.7)	18 (32.1)	22 (31)	0.763
Chorioretinitis, n (%)	4 (26.7)	16 (28.6)	20 (28.2)	0.74
Vitritis, n (%)	0 (0)	2 (3.6)	2 (2.8)	0.74
ID consultation, n (%)	8 (53.3)	44 (78.6)	52 (73.2)	0.096
Timeframe_replacement, median (IQR)	1 (0-1)	1 (0-7.75)	1 (0-7)	1
Replacement< 2 days, n (%)	13 (86.7)	30 (53.6)	1.162	0.035
Persistent bacteremia, n (%)	2 (13.3)	9 (16.1)	11 (15.5)	1

Table 2. Univariate analysis for 30-day infection related mortality

	Crude model			
	OR	p value	95% CI	
Gender (male)	0.971	0.96	0.303	3.108
Age	0.98	0.394	0.935	1.027
Malignancy	1.575	0.44	0.498	4.985
Hematological	6.75	0.048	1.014	44.922
Solid	0.768	0.684	0.215	2.746
DM	1.282	0.776	0.231	7.107
Stem cell transplant	1.929	0.602	0.163	22.832
Cirrhosis	1.262	0.845	0.122	13.081
Hemodialysis	1.899	0.351	0.493	7.313
Eye check	0.255	0.344	0.015	4.327
Corticosteroid within 90 days	2.083	0.345	0.455	9.548
Site of infection				
GI	1.262	0.845	0.122	13.081
CLABSI/PLABSI	1.077	0.949	0.111	10.418
Candida species				
C. albicans	0.432	0.157	0.135	1.381
C. glabrata	2.545	0.188	0.633	10.237
C. parapsilosis	1.282	0.776	0.231	7.107
C. guilliermondii	1.929	0.602	0.163	22.832
C. tropicalis	1.077	0.931	0.199	5.814
Endophthalmitis	0.768	0.684	0.215	2.746
Chorioretinitis	1.158	0.823	0.32	4.185
Vitritis	N/A	N/A	N/A	N/A
ID consultation	0.312	0.057	0.094	1.033
Timeframe_replacement	0.939	0.242	0.846	1.043
Replacement < 2 days	5.633	0.032	1.162	27.312
Persistent candidemia	0.803	0.795	0.154	4.186