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Background. Candidemia contributes to prolonged hospitalizations, increased cost, and increased morbidity and mortality. Obesity worsens clinical outcomes for bacterial infections, though little is known about fungal infections. The purpose of this study was to assess if clinical outcomes differ in obese vs. non-obese patients with candidemia.

Methods. This retrospective cohort study examined adult inpatients diagnosed with candidemia receiving >48 hours of antifungal therapy from June 2013 to December 2017. Patients with polymicrobial infections, dual systemic antifungal therapy, and chronic candidiasis were excluded. Obesity was defined as BMI ≥30 kg/m^2. The primary outcome was infection-related length of stay. Secondary outcomes included time to bloodstream sterilization and in-hospital mortality.

Results. Eighty patients were included: 28 obese and 52 nonobese. Median [IQR] age was 54 [39–63]; 55% males. Median weight was 103 [91–111] kg in obese patients vs. 61 [51–73] kg in nonobese patients ($P < 0.01$). There were no differences in comorbidities (Charlson 3[1–5] obese vs. 3[1–5] nonobese; $P = 0.72$) or disease severity (Pitt bacteremia score 1[0–3] obese vs. 1[0–3] nonobese; $P = 0.50$). *C. albicans* (37.5%) and *C. glabrata* (30.0%) were the most frequently isolated species. Source control (34%) and time to source control (30 hours) were similar between groups, but ID consultation was more frequent in obese patients (82.1% vs. 55.8%; $P = 0.02$). Obese patients were more likely to receive micafungin as definitive therapy (57.1% vs. 21.2%; $P < 0.01$) with quicker initiation of definitive therapy (13 hours vs. 51 hours; $P = 0.03$). Duration of candidemia was 6[4.8–7] and 5[3–6] days in obese and nonobese patients ($P = 0.02$). Both infection-related and total hospital lengths of stay were longer for obese patients at 19[10–42] vs. 12.5[8–19] ($P = 0.05$) and 30.5[15–52] vs. 22[12–39] ($P = 0.19$), respectively. In-hospital mortality was similar (obese: 21.4%, nonobese: 13.5%; $P = 0.36$).

Conclusion. Despite quicker receipt of definitive antifungal therapy, more frequent ID consultation and echinocandin usage, obese patients had longer duration of candidemia, increased infection-related length of stay, and numerically higher mortality.

Disclosures. **All authors:** No reported disclosures.

367. Influence of Body Weight and Outcomes in Candidemia

Mary Musgrove, PharmD[1]; Rachel M Kenney, PharmDSusan Davis, PharmD[3] and Jose Vazquez, MD, FACP, FIDSA[4]; [1]Pharmacy, Henry Ford Hospital, Detroit, Michigan, [2]Henry Ford Health-System, Detroit, Michigan, [3]Henry Ford Health System, CFP#3, Michigan, [4]Infectious Diseases, Augusta University Medical Center, Augusta, Georgia

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Background. Obese patients may have altered pharmacokinetic parameters when compared with normal weight patients due to their body habitus and altered drug clearance. Case reports suggest higher echinocandin dosing may be needed to reach adequate serum concentrations in obese patients. The purpose of this project is to compare patient outcomes between normal weight and overweight patients that receive an echinocandin for candidemia.

Methods. IRB approved, retrospective cohort at five hospitals with an antimicrobial stewardship program. Dates: January 1, 2014–January 31, 2018. Included: ≥18 years, *Candida* species positive blood culture or T2MR, anidulafungin FDA label dose for ≥72 hours. Exclusion criteria: neutropenia, endocarditis, osteomyelitis, meningitis, immunosuppression. Primary outcome: 30-day all-cause mortality. Secondary outcomes: 14-day global clinical cure rates, *Candida* eye involvement, recurrence, antifungal restart, and optimal azole dose.

Results. One hundred seventy-three patients included: 121 blood; 73 T2MR. Obese: more female, pulmonary disease. Underweight: less surgery. Most common species: *C. albicans* (33%), *C. glabrata* (33%). More *C. parapsilosis* in obese (36.4%). Low anidulafungin minimum inhibitory concentrations (MIC) in all groups, but elevated in *C. parapsilosis*. No association between body mass index and mortality: underweight (36.4%), normal (25.8%), overweight (32.0%), obese (33.9%), morbidly obese (31.8%). See Table 1 for variables associated with mortality. No differences in quality of management, recurrence, *Candida* eye involvement, antifungal restart, optimal azole dose. More global cure in survivors.

Conclusion. We were unable to detect a difference in mortality in patients with candidemia by weight group. Line removal and receipt of ≥5 days of anidulafungin were protective.

Table 1.

	Survived, *n* (%) *N* = 118	Died, *n* (%) *N* = 55	Unadjusted OR [CI]	Adjusted OR [CI]
Echinocandin MIC ≥ 0.12 µg/mL	11/29 (38)	0/5 (0)	0.8 [0.63–0.97]	–
Severe sepsis	73 (62)	46 (84)	3.1 [1.4–7.1]	5.1 [1.7–14.8]
Liver disease	10 (9)	13 (24)	3.3 [1.4–8.2]	3.2 [1.1–9.4]
Congestive heart failure	17 (14)	15 (27)	2.2 [1.0–4.9]	2.4 [0.9–6.6]
Echinocandin ≥5 days	68 (58)	21 (38)	0.45 [0.24–0.87]	0.35 [0.15–0.8]
Line removal	95/101 (94)	28/53 (53)	0.07 [0.03–0.19]	0.05 [0.02–0.2]

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368. Community-Onset Candidemia: Trends Over 7 Years

Rebeca Witherell, MD, Babak Hooshmand, MD, Kathleen Riederer, MT, Leonard Johnson, MD and Riad Khatib, MD; Infectious Diseases, Saint John Hospital and Medical Center, Ascension, Grosse Pointe Woods, Michigan

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Background. Candidemia is often hospital acquired. With the inpatient–outpatient shift in healthcare, many cases are acquired in the community. We present a review of community-acquired candidemia.

Methods. We reviewed blood culture results (January 1, 2010–December 31, 2017), selected patients with candidemia, defined the place of onset (community onset [CO]: 0–3 days after admission; hospital onset [HO]: ≥4 days), the source and species distribution and compared CO and HO cases.

Results. We encountered 210 candidemia episodes. The rate of candidemia (0.6–1.2/1,000 discharges) and species distribution fluctuated without a clear trend. CO accounted for 92 (43.8%) episodes including 83 healthcare-related (CO-HC) and 9 (4.3%) without healthcare exposure (CO-A). CO/HO proportion did not significantly change over time. Source and species distribution were similar in CO and HO cases except for higher proportion of intravenous drug users (IVDA), soft tissue/bone (STB) sources, and a trend toward more UTI in CO (table). Comparison of cases with *C. albicans* and *C. glabrata* revealed that *C. glabrata* was more common in diabetics (51.5 vs. 33.0%; $P = 0.005$), and hemodialysis-dependent (H-D) cases (63.6% vs. 38.5; $P = 0.04$), and tended to be less common in UTI (25.9% vs. 45.4% in other sources; $P = 0.09$).

Conclusion. Candidemia remains a healthcare-related event but a significant portion is CO. CO-A is limited to IVDA and patients with comorbidities. Sources and species distribution was similar in CO-HC and HO cases except for more UTI in CO-HC. *C. albicans* remained more common but *C. glabrata* surpassed *C. albicans* among diabetics and H-D.

Candidemia: Comparison of CO-A, CO-HC, and HO Cases. Results Represent. %

	Patient Characteristics				Source					*Candida* Species		
Onset (*n*)	CA	DM	H-D	IVDA	VA	AB	UTI	STB	O-U	alb	gla	Other
CO-A (9)	11.1	11.1	0	44.4	0	33.3	22.2	33.3	22.2	44.5	33.3	22.2
CO-HC (83)	25.3	42.2	21.7	9.6	32.5	12.0	22.0	8.5	25.6	41.0	36.1	22.9
HO (118)	27.1	34.7	11.9	5.1	28.8	21.2	11.9	3.4	34.7	47.5	31.4	21.1
p[a]	0.4	0.9	0.4	0.002	0.5	0.5	0.08	0.004	0.1	0.5	0.8	0.8

Cancer; diabetes; vascular; abdomen/pelvis; urinary tract; soft tissue/bone; other-unknown; *albicans; glabrata;* a: chi square test.

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369. Using Hybrid Models and Blockchain Technology as a Means to Develop a Novel Propensity Score for Candidemia and Invasive Candidiasis

Arni Sr Srinivasa Rao, PhD[1], Jose Vazquez, MD, FACP, FIDSA[2] and Luis Ostrosky-Zeichner, MD, FIDSA, FSHEA[1]; [1]Population Health Sciences, Medical College of Georgia/Augusta University, Augusta, Georgia, [2]Infectious Diseases, Augusta University Medical Center, Augusta, Georgia and [1]Division of Infectious Diseases, Department of Internal Medicine, McGovern Medical School, Houston, Texas

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Background. Early initiation of empiric antifungal therapy has been shown to decrease morbidity and mortality among patients with candidemia/invasive candidiasis (C/IC). However, the initiation of appropriate antifungal therapy is frequently delayed due to the severe limitations in early diagnosis. The goal of this study is to develop a high-risk scoring system to identify patients who may be eligible for preemptive antifungal therapy. The proposed new methodology combines *hybrid modeling* and *blockchain technology.*

Methods. Our approach is novel and using expert physicians' perception of C/IC risk factors with those described in the hospitals through a set of models (*hybrid* model building from primary and secondary data). The goal is to improve the early detection of C/IC and initiate antifungal therapy. Once candidate hybrid models are derived, *blockchain technology* will be utilized. The methodology is based on vectors consisting of the ranking of candidiasis risk factors. These vectors will be constructed based on expert clinicians rank scores of known risk factors. Such methods are different than the usual statistical rank correlation computations, such as Spearman's rank correlation, etc

Results. Preliminary analysis suggests threepotential models. Model 1: uses the following order of variables, by their relative importance: (1) major surgery within 0–3 days, (2)TPN-7–3 days, (3) steroids 0–3 days, (4) ECMO, (5) hemodialysis 0–3 days, (6) diabetes mellitus. Model 2 includes: (1)multifocal *Candida* colonization, 2.) central venous catheter 0–3 days, (3) LVAD, (4) medical ICU, (5) APACHE score > 20, (6) mechanical ventilation. Model 3 includes (1) pancreatitis –710 days, (2) diabetes mellitus, (3) hemodialysis 0–3 days, (4) central venous catheter 0–3 days, (5) TPN-7–3 days, 6.) APACHE score > 20.

Conclusion. *Blockchain* methods we propose are some of the first of their kind used in health research and are very suitable for the early detection of C/IC and other diseases where preemptive therapy is necessary. The following step will be to verify and use these models in the clinical realm and verify their effects on outcomes. Second we need to develop and evaluate our proposed methodology in building hybrid models,