FLC-treated or untreated infected flies ($P < 0.0001$). As POSA is a cell-associated drug, we are conducting *C. auris* phagocytosis assays with Drosophila hemocytes that are co-incubated or not with POSA.

Conclusion. *Drosophila* is a promising, fast, and inexpensive *in-vivo* model to study pathogenesis and drug activity in *C. auris* candidiasis.

Disclosures. **N. Beyda**, Astellas: Scientific Advisor, Grant recipient. **D. P. Kontoyiannis**, Merck: Consultant, Research support and Speaker honorarium. Pfizer: Consultant, Research support. Astellas: Consultant, Research support and Speaker honorarium. Gilead: Speaker's Bureau, Speaker honorarium. F2G Inc.: Speaker's Bureau, Speaker honorarium. Cidara Inc.: Speaker's Bureau, Speaker honorarium. Jazz Pharmaceuticals: Speaker's Bureau, Speaker honorarium.

381. Morphologic Changes Associated With Echinocandin Tolerance Enhance Immunoevasion of *Candida glabrata*

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Background. Activation of the cell wall integrity pathway and enhanced cell wall chitin synthesis are compensatory mechanisms associated with the incomplete killing of *Candida glabrata* by echinocandins. Echinocandin-induced morphologic changes in *C. glabrata* have also been described, yet their correlation with cell wall composition and macrophage responses to echinocandin treated *C. glabrata* are not well characterized. Elucidating these relationships is needed to understand how *C. glabrata* is capable of resisting both echinocandin killing and host immune responses.

Methods. Three echinocandin-susceptible bloodstream isolates of *C. glabrata* were grown in liquid RPMI with or without inhibitory concentrations of micafungin (MFG; 0.004 μg/mL) or caspofungin (CAS; 0.008 μg/mL). Cells were stained with fluorescent markers specific for cell wall chitin, mannan, and viability, then imaged utilizing high-content single-cell techniques. Phenotypic characteristics of *C. glabrata* cells that survive echinocandin exposure were determined by comparing the morphology and abundance cell wall components among the viable and nonviable cell subpopulations. To identify cellular characteristics associated with reduced macrophage phagocytosis, CAS or MFG treated cells were co-incubated RAW 264.7 macrophage and imaged as above. Phenotypic characteristics of the nonphagocytized yeast cells before and after co-incubation with macrophage was compared.

Results. Compared with untreated controls, growth in MFG and CAS significantly increased the proportion of cells with multiple-buds (50% ± 10% and 40% ± 18% vs. 12% ± 6%; $P < 0.001$) and induced cellular enlargement (biovolume; 35 ± 9 μm^3 and 80 ± 58 μm^3 vs. 26 ± 5 μm^3; $P < 0.001$). Cell enlargement, reduced cell wall mannan, and increased chitin were highly correlated with survival to MFG and CAS exposure ($P < 0.001$). Comparison of the drug-exposed yeast cell population before and after co-incubation with macrophage found an increased proportion of viable cells and cells with a large diameter (≥7 μM) remained un-phagocytized, indicating strong phagocytic preference for small, nonviable yeast cells.

Conclusion. *C. glabrata* cells that survive echinocandins have distinct cell wall changes and are large in size. These cells tend to evade phagocytosis by macrophages, suggesting a potential mechanism by which *C. glabrata* may persist despite echinocandin treatment.

Disclosures. **N. D. Beyda**, Astellas: Grant Investigator and Scientific Advisor, Consulting fee and Research grant.

382. Virulence in *Candida glabrata* Is Not Attenuated by FKS Mutations but Associated With the Frequency of Cells With Distinct Morphology

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Background. Echinocandins are the first-line treatment for *C.* glabrata; however, echinocandin resistance is increasingly reported. Acquired *FKS*-mediated echinocandin resistance has been associated with the upregulation of chitin synthesis and attenuated fitness and virulence in *C. albicans*; however, conflicting data are reported in *C. glabrata*. Here, the influence of FKS mutations on fitness, virulence, morphology, and cell wall chitin was assessed among clinical strains of *C. glabrata*.

Methods. Three sets of isogenic paired strains consisting of an index-WT and persistent-*FKS* mutant (S663P), two un-paired *FKS* mutant strains (S663F and S629P), and a WT reference strain (CBS138) were included. Growth kinetics were measured over 24 hours in 96-well microplate containing liquid RPMI. After overnight growth in RPMI and staining with a chitin-specific fluorescent marker, morphology, and chitin were assessed at the single-cell level utilizing high-content imaging technique. Virulence was evaluated in *Galleria mellonella* larvae by injecting 10^7 cells/larvae. Mortality was assessed daily for 5 days.

Results. Significant differences in growth kinetics, frequency of morphologic phenotypes within the cell populations (nonbudding, single-bud, multiple-buds), and virulence were observed between strains obtained from different patients ($P < 0.05$ for each). However, no difference was observed between paired index-WT and persistent-*FKS* S663P mutants. Compared with index-WT and the CBS138 reference strain, *FKS* mutant isolates (S663P, S629P, and S663F) had significantly elevated cell wall chitin content ($P < 0.05$). Neither chitin content, the presence of an *FKS* mutation, nor *in vitro* growth characteristics were found to be associated with virulence. Virulence was strongly correlated with the frequency of multi-bud cells within the population however, with 5-day post-injection survival rates of 4% vs. 28% for high-frequency (>12% multi-bud cells) and low-frequency strains, respectively ($P < 0.001$).

Conclusion. Acquired *FKS*-mediated echinocandin resistance induced significant alterations in cell wall chitin content but was not observed to attenuate fitness or virulence. Virulence was highly associated with the frequency of cells with distinct morphology.

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383. An Increased Rate of *Candida parapsilosis* Infective Endocarditis Is Associated With Injection Drug Use

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Background. *Candida parapsilosis* fungemia typically occurs in patients with intravascular catheters or prosthetic devices. In 2017, we noted an increase in *C. parapsilosis* infective endocarditis (IE).

Methods. We retrospectively reviewed *C. parapsilosis* fungemia and IE from January 2015 to February 2018. Species were identified using MALDI-TOF, and confirmed by ITS sequencing.

Results. Between 2010 and 2017, there was no increase in cases of *C. parapsilosis* fungemia (mean: 13/year), but there was a significant increase in *C. parapsilosis* IE ($P = 0.048$) (Figure 1). From January 2015 to February 2018, 22% (12/54) of *C. parapsilosis* fungemia was complicated by IE. Demographics of *C. parapsilosis* fungemia included: community-acquired infection (87%), presence of vascular catheters (80%), opiate noninjection drug use (non-IDU, 44%), IDU (20%), and presence of cardiac devices (18%). Ninety-one percent (49/54) of *C. parapsilosis* fungemia was caused by *C. parapsilosis sensu strictu* (Cpss); *C. orthopsilosis* and *C. metapsilosis* accounted for 4% (2/54) each (1 isolate could not be subtyped). Cpss, *C. orthopsilosis*, and *C. metapsilosis* accounted for 83% (10/12), 8% (1/12), and 8% (1/12) of IE, respectively. Ninety-two% (11/12) of *C. parapsilosis* IE was left-sided, and 33% (4/12) involved multiple valves. Risk factors for *C. parapsilosis* IE were past or active IDU ($P < 0.001$), community-acquired fungemia ($P = 0.02$), prosthetic heart valve ($P = 0.01$) or implanted cardiac device ($P = 0.03$). Receipt of an antibiotic within 30 days was a risk for *C. parapsilosis* fungemia without IE ($P = 0.001$). Median age for IE vs. fungemia was 38 vs. 57 years ($P = 0.09$). By multivariate logistic regression, IDU ($P < 0.0001$), prosthetic valve ($P = 0.006$) or implanted cardiac device ($P = 0.04$) were independent risks for *C. parapsilosis* IE. 70% (7/10), 20% (2/10), and 10% (1/10) of patients with IDU and *C. parapsilosis* IE primarily used heroin, buprenorphine/naltrexone, and cocaine, respectively. 50% (6/12) of patients with *C. parapsilosis* IE underwent surgery; most common initial AF regimens were caspofungin and amphotericin B. Nonsurgical patients were suppressed with long-term azole; one relapsed requiring surgery. Thirty-day and in-hospital mortality for patients with fungemia vs. IE were 32% vs. 17% and 26% vs. 17%, respectively.

Conclusion. *C. parapsilosis* IE has emerged at our center. Unique aspects of *C. parapsilosis* pathogenesis that may account for emergence are a propensity to colonize skin, adhere to prosthetic material and form biofilm. *C. parapsilosis* IE may be an under-appreciated consequence of IDU and opioid abuse.

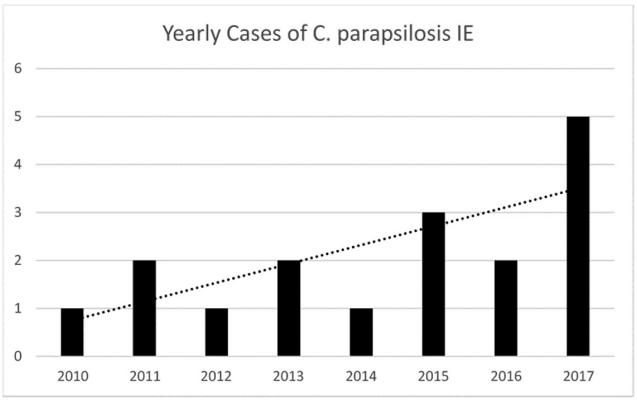

Figure 1. Cases of *C. parapsilosis* infective endocarditis

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

384. Findings From a *Candida auris* Admission Screening Pilot in New York State

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Background. *Candida auris* is an emerging multidrug-resistant yeast which can spread within healthcare facilities and is associated with significant morbidity. Over 160 clinical cases have been reported in NYS. This pilot aims to assess the feasibility of *C. auris* admission screening and to better understand its role in controlling spread of *C. auris* in an area where it has emerged.

Methods. One hospital and two nursing homes (NHs) with known prior cases participated (one NH and hospital are closely associated and are reported together). Patients were screened on admission to any of three hospital intensive care units (medical, cardiac, pulmonary) or to a ventilator unit in the NHs from November 2017 to April 2018. Screening consisted of bilateral nares and axilla/groin swabs sent to the NYS Department of Health Wadsworth Center (WC) for a WC-developed *C. auris* real-time polymerase chain reaction (rt-PCR) test. Specimens with detection of *C. auris* on rt-PCR underwent fungal culture. Facilities were alerted of positive results and infection control precautions were promptly initiated.

Results. To date, 575 patients (1,371 samples) were screened. Of patients not previously known to be colonized, 39 had *C. auris* detected on rt-PCR; 34 confirmed by *C. auris* culture at either site and one culture pending. Of these, 30 (88%) were detected and confirmed from the axilla/groin specimen (Figure 1). Mean age was 76 years and 59% were females. Patients had significant healthcare facility exposure (Figure 2). Eleven (32%) were from NH-A and 23 (68%) from the hospital/NH-B combined. Rates of positivity were 16.2% (11/68) for NH-A and 4.6% (23/498) for the hospital/NH-B.

Conclusion. *C. auris* rt-PCR is a useful tool within an admission screening program; however, more accessible and affordable rapid laboratory diagnostics are urgently needed. The axilla/groin site detected the majority of colonized individuals. Admission screening was feasible and increased facility knowledge of colonization status, which led to earlier implementation of infection control precautions potentially limiting spread. However, further study is needed to assess transmission dynamics and potential impact of admission screening on control of *C. auris* within an outbreak or endemic setting.

Figure 1.

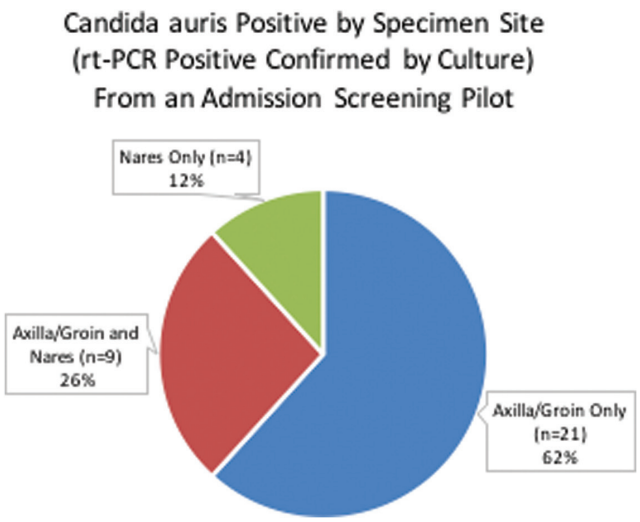
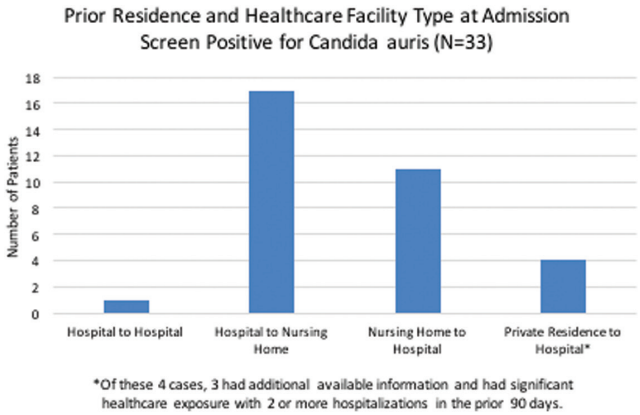


Figure 2.



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385. The Value Added From *Candida auris* Point Prevalence and Environmental Studies in New York State

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Background. As of March 25 2018, 151 clinical cases of *C. auris* were diagnosed in NYS. We conducted point prevalence surveys (PPS) and environmental surveys (ES) to detect surveillance cases and assess the burden of environmental contamination in NYS healthcare facilities from September 12, 2016.

Methods. A PPS was defined as culturing ≥2 individuals at a healthcare facility that diagnosed, cared for, or was near a facility with a *C. auris* case. ES involved environmental swabbing in facilities where cases resided or were admitted. Cultures and polymerase chain reaction (PCR) were performed at the NYS Wadsworth Center.

Results. As of March 25, 2018, 81 PPS or ES had been conducted at 55 facilities. From these PPS, a total of 144 (6.1%) individuals were positive for *C. auris* by culture; 125 were PCR positive. The rates of culture positive *C. auris* identified patients varied by facility type: hospitals (38/767, 5.0%), long-term care facilities (LTCF) (88/1,404, 6.3%), long-term acute care (1/35, 2.9%), and co-located hospital and LTCF (17/138, 12.3%). The majority of the LTCF *C. auris* culture-positive cases (80/82) were identified in facilities that cared for ventilated patients. Rates in LTCF caring for ventilated patients were nearly 10 times as high as other LTCF [86/1,121 (7.7%) vs. 2/284 (0.7%)]. ES identified 86 (3.0%) samples positive by culture and 257 (8.9%) by PCR. Thirty-seven (67%) of the 55 facilities had at least one positive environmental sample by PCR or culture; many of these positive samples were from surfaces or equipment deemed to be "clean." Over 1,900 person-hours were needed to conduct onsite PPS and ES that collected >4,200 human and >2,800 environmental samples and identified opportunities for improving basic infection prevention and environmental cleaning. Ten facilities, including the co-located hospital and LTCF, had multiple positive PPS or ES.

Conclusion. PPS conducted over 17 months detected many colonized individuals and *C. auris* in facility environments, likely indicating a silent reservoir for this organism beyond clinical cases, especially in LTCFs. Serial PPS and ES can help improve *C. auris* detection and inform subsequent infection prevention and control interventions. However, these efforts are resource intensive and can divert resources from other activities.

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