μL). Non-HIV patients were significantly older ($P < 0.001$) and had higher rates of altered mental status (AMS) on presentation (58.3% vs. 25%, $P = 0.05$). There was no significant variation in temperature, blood pressure, white blood cell count, serum sodium, or CSF opening pressure. Non-HIV patients had significantly higher CSF cell count ($P = 0.02$) and protein ($P < 0.001$), and lower glucose ($P = 0.005$) compared with HIV patients. There was no significant variation in length of stay or rates of intensive care unit admission. Overall, 90-day all-cause mortality was 19.4%: mortality rates were significantly higher in non-HIV patients at both 90 days ($P = 0.017$) and one year ($P = 0.047$).

Conclusion. Compared with individuals with HIV, non-HIV cryptococcal meningitis patients have a more inflammatory CSF profile at the time of diagnosis, higher rates of AMS on presentation, and higher rates of 90-day and 1-year all-cause mortality. We postulate that reversible immunosuppression among HIV patients may partially explain these findings. Further research is needed to identify hallmarks of cryptococcal meningitis in non-HIV patients to facilitate early intervention.

	HIV (n=24)	Non-HIV (n=12)	p-value	Total Cohort (n=36)
Mean age (±SD, years)	42.2 ± 9.9	62.2 ± 7.4	*<0.001**	48.8 ± 13.2
Male sex (%)	21 (87.5)	9 (75)	0.343	30 (83.3)
White (%)	16 (66.7)	7 (58.3)	0.624	23 (63.9)
Median CSF cell count/μL (IQR)	27.5 (12-63)	84 (53-265)	*0.02**	53 (14-118)
Mean CSF glucose (±SD, mg/dL)	44 ± 17.2	25.6 ± 16.1	*0.005**	37.4 ± 18.8
Median CSF protein (IQR, mg/dL)	57 (47-89)	171 (101-292)	*<0.001**	89 (51-171)
Altered mental status (%)	6 (25)	7 (58.3)	*0.05**	13 (36.1)
ICU Admission (%)	5 (20.8)	5 (41.7)	0.188	10 (27.8)
90-day mortality (%)	2 (8.3)	5 (41.7)	*0.017**	7 (19.4)
1-year mortality (%)	3 (12.5)	5 (41.7)	*0.047**	8 (22.2)

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1718. The Natural History of Chronic Pulmonary Coccidioidomycosis in the Pre-Antifungal Era

Alana J. Freifeld, BA[1]; Derek Bays, MD[2]; George R. Thompson, III, MD[3]; Susan Reef, MD[4]; Linda Snyder, MD[5]; John N. Galgiani, MD[6]; [1]California Northstate University, Sacramento, California; [2]UC Davis, Sacramento, California; [3]UC-Davis, Sacramento, California; [4]CDC, Atlanta, Georgia; [5]University of Arizona, Tucson, Arizona; [6]University of Arizona College of Medicine, Tucson, Arizona

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Background. Prior studies to characterize pulmonary coccidioidomycosis (CM) have been limited by small samples. The historical VA-Armed forces CM patient group provides a unique cohort of patients not treated with conventional antifungals to better characterize and describe chronic pulmonary CM with an emphasis on chronic nodules and cavities.

Methods. A retrospective study of 374 VA-Armed forces non-disseminated CM patients diagnosed between 1955 and 1958 and followed to 1966. Patients had a pulmonary nodule or a pulmonary cavity secondary to CM. Basic demographic information, complement fixation serology, and details regarding the nodules and cavities were investigated.

Results. The studied population had a median age of 34 with 97% men and 84% white. Eighty percent had no underlying pulmonary disease and concurrent tuberculosis was the most common comorbid pulmonary condition (11%). Patients with cavities had a median complement fixation (CF) serology of 1:2 (interquartile range (IQR) negative 1:8). Patients with nodules had a median CF serology of negative (IQR negative 1:2). The median number of pulmonary nodules was 1 with a median size of 1–1.9 cm. Sixty-nine percent of the nodules had a sharp, well-defined border, while 10% had a calcified border. The median number of cavities was 1 with a median size of 3–3.9 cm. Forty-five percent of the cavity walls were thin, 31% were thick, and 19% were variable in size. Twenty-six percent of the cavities developed during acute infection with 46% developing without a prior history of primary infection. Twenty-nine percent of the cavities were stable in size, 20% increased in size, 5% disappeared, 4% ruptured, and 2% decreased in size.

Conclusion. This study helps further characterize chronic pulmonary nodules and cavities caused by CM. To the best of our knowledge, this is the largest study of the natural history of chronic CM pulmonary cavities and nodules providing valuable descriptive features.

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1719. Incidence and Characterization of Invasive Fungal Infections (IFIs) in Patients with Chronic Lymphocytic Leukemia (CLL) Treated with Ibrutinib (IBR)

Michael Frei, PharmD[1]; Samuel L. Aitken, PharmD[2]; Samuel L. Aitken, PharmD[2]; Nitin Jain, MD[1]; Philip Thompson, MD[1]; William G. Wierda, MD, PhD[3]; Dimitrios P. Kontoyiannis, MD[2]; Adam DiPippo, PharmD[1]; [1]MD Anderson, Houston, Texas; [2]The University of Texas MD Anderson Cancer Center, Houston, Texas; [3]University of Texas MD Anderson Cancer Center, Houston, Texas

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Background. IBR is a Bruton's tyrosine kinase inhibitor, and plays a key role in the treatment of CLL. In randomized clinical trials, <1% of IBR-treated CLL patients developed IFIs. However, several IFIs were reported with real-life use of IBR.

Methods. This is a retrospective observational study of all CLL patients (> 18 years) treated with IBR (2/2014–8/2018) at MD Anderson Cancer Center. We excluded patients with active IFI (proven and probable, EORTC/MSG criteria) at the start of IBR and patients with <6 months of follow-up.

Results. Of the 821 CLL IBR-treated patients, 24 developed probable or proven IFI (2.9%). Of these infections, 21 occurred within 30 days (d) of last IBR dose, while 3 IFIs occurred at 94, 135 and 221 d post IBR, respectively. The majority of patients with IFI were male (83%) with a median age of 66 years at IFI diagnosis. The median prior lines of therapy for CLL was 1 (range 0–7), with 29% receiving IBR as frontline treatment. Five patients had evidence of Richter's transformation at the time of IFI diagnosis, while two patients had prior stem cell transplant. The average time from start of IBR to diagnosis of IFI was 338 d, with only 7 cases of IFI within the first 3 months of IBR. The majority of IFIs were proven/probable aspergillosis (63%), including 9 cases of *Aspergillus fumigatus*. The remaining infections consisted of *Cryptococcus neoformans* (21%), *Fusarium spp.* (8%), with one case each of candidiasis, histoplasmosis, mucormycosis, and *Pneumocystis jiroveci* pneumonia. Three patients had evidence of poly-fungal IFI. The sites of infection were pulmonary (88%), blood (13%), CNS (13%), and sinus (8%). Five patients were diagnosed with disseminated IFI, including *Cryptococcus* spp. (2 cases), *Rhizopus* spp., *Aspergillus* spp., and *Candida* spp. The 42-day mortality rate post IFI diagnosis was 25%.

Conclusion. We report the largest single-center cohort of CLL patients on IBR to date. The IFI incidence of 2.9% (24/821) is consistent with most previous reports estimating a 0.5–4% incidence. In contrast to published reports, close to 1/3 of our patients with IFI received IBR as frontline therapy and most IFIs (71%) were diagnosed > 3 months after starting IBR. We are currently conducting a case–control comparison with IBR–treated CLL patients with no infection to uncover risk factors associated with IFIs in these patients.

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1720. Isolation and Characterization of *Candida auris* From an Active Surveillance System in Texas

M Jahangir Alam, PhD; Khurshida Begum, PhD; Bradley T. Endres, PhD; Jacob McPherson, BS; Gabriela Costa, BS; Julie M. Miranda, MPH; Kevin W. Garey, PharmD, MS, FASHP; The University of Houston College of Pharmacy, Houston, Texas

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Background. *Candida auris* is an emerging new multi-drug-resistant fungal pathogen spreading globally. C. auris is associated with outbreaks due to the bloodstream, ear, and wound infections with a high mortality rate (30 to 60%). As part of our multi-pathogen surveillance system, we began screening for *C. auris* to understand the ecology, sources, and epidemiology of this important pathogen from leftover stool samples collected from hospitalized patients.

Methods. Four hundred and seventeen stool samples were collected, enriched in brain heart infusion broth for 2–3 days at 37°C, and sub-cultured onto selective *Candida* agar plates. Agar plates were incubated at 37°C for another 2–3 days and suspected Candida colonies were stocked for DNA extraction, PCR identification, and whole-genome sequencing. PCR amplicons were sequenced to confirm the identification *C. auris*. Enrichment samples were also screened by PCR to directly detect *C. auris*. Minimum inhibitory concentration (MIC) of various anti-fungal drugs was determined by the micro-dilution method using a commercial MIC plate (Sensititre "YeastOne").

Results. Three *C. auris* samples were identified by PCR (0.7%; 3/417) of which one was able to be cultured. The isolated strain was resistant to fluconazole, itraconazole, voriconazole, posaconazole, and caspofungin. WGS data analysis demonstrates our isolate has high similarity with the Pakistani strains.

Conclusion. We have detected *C. auris* from stool samples of hospitalized patients in Texas for the first time. WGS data indicate our isolate has high similarity with South Asian patient strains. Long-term surveillance of *C. auris* is essential to understand the infection or colonization sources and epidemiology of this newly emerging fungal pathogen.

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1721. A Transcriptional Signature of Acute *Aspergillus* Infection Offers High Diagnostic Accuracy Despite the Presence of Immunosuppression

Julie M. Steinbrink, MD[1]; Aimee K. Zaas, MD MHS[1]; Marisol Bncourt-Quiroz, MLS[2]; Jennifer L. Modliszewski, PhD[3]; David Corcoran, PhD[3]; Micah T. McClain, MD, PhD[4]; [1]Duke University, Durham, North Carolina; [2]Augusta University Medical Center, Augusta, Georgia; [3]Duke University Center for Genomic Analysis and Bioinformatics, Durham, North Carolina; [4]Duke University Medical Center, Durham, North Carolina

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Background. Invasive aspergillosis (IA) is a major cause of critical illness in immunocompromised (IC) patients. However, current fungal testing methods have significant limitations and there is a clear need for new diagnostic options. Disease-specific gene expression patterns in circulating host cells show promise as novel diagnostics; however, it is unknown whether such a "signature" exists for IA. Additionally,