Species	Number	Percentage
C. albicans	20	21
C. glabrata	22	23.40
C. parapsilosis	34	36.10
C. tropicalis	8	8.50
C. krusei	2	2.10
C. orthopsilosis	3	3.10
C. nivariensis	1	1.06
C. Kefyr	1	1.06
Pichia norvegensis	1	1.06
C. lusitane	1	1.06
Trichosporum spp.	1	1.06
Total	94	100

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2046. FungiScope™: News on the Global Emerging Fungal Infection Registry

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Background. Numbers of rare invasive fungal diseases (IFD) are rising worldwide due to increasing patient population at risk. To broaden the knowledge on epidemiology of rare IFD and eventually improving diagnosis and clinical outcome, FungiScope™, a global registry for rare IFD, has been initiated.

Methods. FungiScope™ uses web-based data capture (www.clinicalsurveys.net). Eligible are cases with proven or probable infection due to rare, non-endemic fungi. Data collected include demographics, underlying conditions, clinical presentation, diagnostics, antifungal therapy and outcome. Clinical isolates are collected for centralized identification, susceptibility testing and exchange between collaborators.

Results. To date, 728 valid cases of rare IFD from 41 countries are included in the registry: IFD due to Mucormycetes (n = 358), *Fusarium* spp. (n = 87), rare yeasts (n = 83), dematiaceae (n = 69), and *Scedosporium* spp. (n = 55) are the most frequently reported. FungiScope™ is supported by central labs in the Czech Republic, India, Russia, and Spain. Recently, FungiScope™ collaborators jointly published results on (I) invasive mucormycosis in children analyzed together with cases from the registry study Zygomyco.net, (II) disseminated fusariosis in 10 children, and (III) invasive infections due to *Saprochaete* and *Geotrichum* spp. in 23 patients.

Conclusion. The clinical relevance and by this the awareness of emerging IFD is increasing. FungiScope™ is a valuable resource used for collaborative studies on rare IFD. Operating and management of the registry requires considerable effort to ensure high data quality for comprehensive analyses, which provide insights into current clinical management of the diseases and thus, hold the potential to identify strategies for early diagnosis and effective treatment.

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2047. Study of Molecular epidemiology, risk factor analysis and comparison of diagnostic methods for rapid diagnosis of fungal pneumonia in critically ill cirrhotics

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Background. Liver cirrhosis causes immune dysregulation and increased susceptibility to fungal infections. We studiede risk factors, molecular epidemiology and compared the rapid diagnostic methods and biomarkers for fungal pneumonia in critically ill cirrhotics

Methods. Single-center, prospective cohort study of 50 critically ill cirrhotics with fungal pneumonia between January and September 2017. Comparative analysis of culture, real-time PCR and biomarkers; Bronchoalveolar lavage and serum galactomannan, serum procalcitonin were measured by ELISA and chemiluminescence assay on Days 1, 3, 7. Final outcome were mortality within 1 month after diagnosis or discharge. Genotyping of clinical and air sampling *Aspergillus* isolates was done

Results. *Aspergillus flavus* was most common species (34/50, 68%). Risk factors were, neutropenia (P 0.03), steroids prior to ICU admission (P 0.02), prolonged hospitalizations >21 days (P 0.05). Culture positivity was 80%. Culture was not inferior to real-time PCR for diagnosis of fungal pneumonia. BAL Galactomannan was early prognostic marker with median rise above >1 index value on Day 1. Median PCT level was higher from Day 1 in the fungal pneumonia nonsurvivor group (3.29 vs. 0.8 ng/mL) with higher 30-day mortality (72%). Higher PCT was associated with bacterial co-infection (48%), antibiotic(74%) and antifungal therapy and renal failure and mortality. Cinical isolates from patients matched those recovered from air in two clusters.

Conclusion. Fungal pneumonia complicates cirrhotics with neutropenia, prolonged hospitalization and steroids as risk factors. *Aspergillus* species predominate as in Asian epidemiology. Culture methods are reliable and combination of molecular test with BAL galactomannan is useful for rapid diagnosis. SerumPCT is raised in patients with fungal pneumonia and associated with higher mortality. In our study the baseline PCT at admission to ICU was higher in nonsurvivor group, levels on D3 and D7 were persistantly higher. High serum procalcitonin level is an independent prognostic biomarker of mortality risk in fungal pneumonia. Genetic relatedness of clinical and environmental sample necessitates infection control measures to prevent invasive aspergillosis in high-risk patients.

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2048. Comparison Between Endpoint and Real-Time (RT) Polymerase Chain Reaction (PCR) for the Diagnosis of *Pneumocystis* Pneumonia (PCP)

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Background. The definitive diagnosis of PCP requires direct visualization of the organism by silver or direct fluorescent antibody stain, but in recent years PCR has become a widely used diagnostic tool. Varying results have been noted with different PCR assays; one concern has been that RT-PCR will be more sensitive and not differentiate colonization from infection. For this study, we compared the performance of RT-PCR with that of endpoint PCR for detection of PCP.

Methods. All adult patients who had a bronchoalveolar lavage (BAL) or sputum sample positive for *Pneumocystis* by PCR at the U. Michigan Hospitals from February 2014–February 2018 were studied. Before February 2017 samples were tested with endpoint PCR followed by agarose gel electrophoresis and after February 2017 with RT-PCR. For each patient, a strict case definition based on host factors, clinical presentation, radiological and pathologic findings, was used to classify PCP as proven, probable, possible, and unlikely. Based on this classification, endpoint PCR and RT-PCR results were designated as true positive or false-positive presumably colonized (FP).

Results. The number of specimens tested each year was similar, ranging from 751 to 791. One hundred and fifty-three patients tested positive: 77/2318 (3%) by endpoint PCR and 76/783 (10%) by RT-PCR. One hundred and twenty-six patients had risk factors for PCP: hi-dose steroids (39), hematologic malignancy (38), chemotherapy within 3 months (24), HIV (14), solid-organ transplant (12), stem cell transplant (9), and 27 patients had no PCP risk factors. By our definitions, patients were classified as proven (2), probable (70), possible (46) and unlikely (35). RT-PCR gave a higher FP rate (27/76, 35%) than endpoint PCR (8/77, 10%,) $P < 0.0001$, especially in those with chronic lung disease, $P = .001$ and those with no known PCP risk factors, $P < 0.0001$. More patients with no risk factors tested positive with RT-PCR (20) than with endpoint PCR (7), $P = .006$. FP rates RT-PCR were similar in sputum (34%) and BAL (36%).

Conclusion. RT-PCR gave significantly more FP results, likely due to increased detection of *Pneumocystis* colonization. Pretest probability should be considered when ordering a highly sensitive test such as RT-PCR and positive results must be interpreted in the context of the clinical presentation, radiological findings and risk factors.

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