corresponding blood cultures, time to de-escalation, and duration of therapy (DOT) were collected.

**Results.** Patients mean age 60 years, 54% were male. Candidemia risk factors included: 28% immunocompromised (cancer, chemotherapy, chronic steroids, febrile neutropenia), 26% renal failure, 19% malnutrition/TPN, 14% CVC/PICC line and 11% intra-abdominal infection/surgery. 78% of the patients were in the ICU: 9% of T2 tests were positive. The resulting species were as follows: C. albicans/tropicalis, 47% C. parapsilosis 41% and 12% C. glabrata/Krusei. Of the patients with a positive T2 result only 24% had a positive corresponding blood culture while those with positive blood culture results 94.9% were T2 positive. Negative T2 tests resulted in discontinuation of antifungal therapy in 23% and avoid antifungal therapy initiation in 41% of patients but 36% of patient's antifungal regimens were not discontinued despite a negative T2 result. Average time to de-escalation was 40.8 hours. Negative T2 results decreased average duration of therapy of micafungin by 2.1 days.

**Conclusion.** T2 Candida Panel demonstrated greater sensitivity and faster to detect Candidemia compared with blood cultures. Despite the test's rapid nature and high sensitivity, time to de-escalation remains at 2 days suggesting variations in physicians' utilization of T2 test results.

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

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**2067. Relationship of T2 Candida Panel to Disease Severity, Mortality and Time to Therapy in Patients with Candidemia**

Orlando D Turner, MD1; Justin F Hayes, MD1; Todd P McCarty, MD2; Malia Manning, RPH1; Craig I Hoesley, MD1 and Peter G Pappas, MD1; Division of Infectious Diseases, University of Alabama at Birmingham, Birmingham, Alabama, 2Birmingham VA Medical Center, Birmingham, Alabama, 3University of Alabama at Birmingham, Birmingham, Alabama, 4Division of Infectious Disease, University of Alabama at Birmingham, Birmingham, Alabama

**Session:** 236: Diagnostics - Mycology

**Saturday, October 7, 2017: 12:30 PM**

**Background.** Candidemia is a common hospital-acquired infection that is associated with high mortality. Diagnosis via blood cultures (BC) is limited by poor sensitivity (50%) and slow turnaround time (2–5 days). T2Candida (T2C) is a newly available rapid test using magnetic resonance that can detect 5 species of Candida from whole blood in < 6 hours with a sensitivity of 91.1%.

**Methods.** We performed a retrospective analysis of all cases of candidemia detected by BC and/or T2C during 2016 at UAB Medical Center. The test was targeted to ICU patients who had higher risk criteria for candidemia. We collected APACHE II scores at the time of BC or T2C test collection as a surrogate for severity of illness.

**Results.** We identified 139 patients with candidemia, defined as a positive BC (BC+) and/or positive T2C (T2C+). Performance of a single test led to diagnosis in 103 patients (74%). On initial diagnosis if both a BC and T2C were performed within a 24 hour interval, patients were grouped based on the results of both tests. 36 patients (26%) had both tests performed: 8/36 (22%) were concordant (BC+/T2C+), and the remaining 5 were BC+/T2C-. The difference in APACHE II scores and the remaining 5 were BC+/T2C-. The difference in APACHE II scores and 30-day mortality rate of BC+ patients (13.6, 0.36) and T2C+ patients (16.4, 0.46) were not significant (P-values 0.06 and 0.29, respectively); the difference in TTT between BC+ patients (1.6 days) and T2C+ patients (0.1 day) was statistically significant (P-value < 0.0001).

**Conclusion.** T2C demonstrated excellent sensitivity (88.6%) in a ‘real world’ setting focused in the ICU. We observed a significant reduction in TTT associated with the T2C assay, but did not observe an improvement in survival with earlier therapy for candidemia defined as a BC+ Patients with T2C+ had higher APACHE II scores suggesting biased testing towards sicker patients. We cannot explain the large number of discordant results (BC+/T2C+, BC+/T2C–), but hypothesize that T2C+ may be a more sensitive marker for invasive candidiasis/candidemia. These data strongly endorse the need for a large, prospective, multicenter study exploring the use of T2C vs. standard of care in the diagnosis and management of this disorder.

**Disclosures.** P. G. Pappas, T2Candida Panel: Grant Investigator and Scientific Advisor, Grant recipient, Research grant and Research Support Merck: Grant Investigator, Grant recipient and Research grant Cicada: Grant Investigator and Scientific Advisor, Grant recipient and Research grant Astellas: Grant Investigator, Grant recipient and Research grant Viatris: Scientific Advisor, Consulting fee Amyle: Scientific Advisor, Consulting fee Vical: Scientific Advisor, Consulting fee}

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**2068. High-volume Sputum Culture for the Diagnosis of Pulmonary Aspergillosis**

Pascalis Vergidis, MD, MSc1; Caroline Moore, PhD2; Rima Rautemaa-Richardson, PhD, FRCPATH3; and Malcolm Richardson, PhD, FRCPATH2; 1University Hospital of South Manchester, University of Manchester, Manchester, United Kingdom, 2Myology Reference Centre, Manchester, United Kingdom

**Session:** 236: Diagnostics - Mycology

**Saturday, October 7, 2017: 1:20 PM**

**Background.** Improved diagnostics are needed for the management of invasive fungal infections. Standard sputum cultures have a low yield in the detection of mold. Conventionally only a fraction of the specimen is cultured. We studied the performance of high-volume cultures (HVCs) where the entire specimen is plated on Sabouraud agar (SA).

**Methods.** Specimens were collected at our centre from January 2015 through February 2017. For conventional culture, sputum was homogenized by mixing with an equal volume of 0.1% dithiothreitol solution and diluted 500-fold in sterile water. Ten μL of the diluted specimen was cultured on SA (2 plates) and incubated at 37°C and 45°C for up to 5 days. For HVC, the entire undiluted specimen (up to 1 mL) was cultured on SA (up to 2 plates) and incubated at 30°C for up to 14 days.

**Results.** We studied 306 paired specimens that were collected for both conventional culture and HVC on the same day. A total of 139 patients with positive cultures had the following conditions: chronic pulmonary aspergillosis (58%), allergic bronchopulmonary aspergillosis/severe asthma with fungal sensitization (27%), Aspergillus bronchitis (9%), cystic fibrosis/bronchiectasis (6%). Aspergillosis was recovered by HVC in 114 specimens that had no mold growth by conventional culture. The same Aspergillus species was recovered by both HVC and conventional culture in 50 paired specimens. For 142 specimens there was no Aspergillus growth by HVC (Penicillium spp. grew in 4). For two of the negative HVC specimens A. fumigatus grew by conventional culture. The following species were recovered by HVC: A. fumigatus (80%), A. tenuis (10%), A. flavus (3%), other (7%). Susceptibility testing (EUCAST standard) was performed for 127 isolates of A. fumiga-
utus. Rates of antifungal resistance were as follows: itraconazole 28%, voriconazole 19%, posaconazole 28%, isavuconazole 32%, amphotericin B 8%. Pan-azole resistance was detected in 17%. If HVCs were not performed, resistance to at least one of the antifungals would have been missed in 15 (47) of cases.

**Conclusion.** The recovery rate of Aspergillus spp. is significantly higher for HVCs compared with conventional cultures and this can impact patient care. HVCs can be performed in any microbiology laboratory without the need for additional tools.

**Disclosures.** R. Rautemaa-Richardson, Pfizer, Astellas, Gilead Sciences, MSD, Basleia: Consultant, Speaker honorarium; M. Richardson, Pfizer, Astellas, Gilead Sciences, MSD, Basleia and Pulmocide: Consultant, Speaker honorarium

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**2069. Automated Detection of Candida auris Direct from Whole Blood by T2MR**

Brendan Manning, Ph. D.; Jessica. L Snyder, Ph. D.; Benjamin Chang, BSc; Cathy Wong, BSc; Trishha Higa, BSc; Robert Shivers, Ph. D. and Thomas. J Lowery, Ph. D.; T2 Biosystems Inc., Lexington, Massachusetts

**Session:** 236: Diagnostics - Mycology

**Saturday, October 7, 2017: 12:30 PM**

**Background.** Candida auris is now recognized worldwide as a virulent pathogen that is difficult to manage, resulting in high mortality rates. The majority of C.auris isolates have exhibited resistance to one or more antifungal agents. Nosocomial infections caused by C.auris are growing due to the increasing rate of colonization and environmental causes. The diagnostic tests available for the identification of C. auris are limited to date. Additionally, microbiological cultures and subsequent identification of Candida species require 2-5 days, and have a sensitivity of approximately 50%. Accurate diagnosis of a C. auris infection is also hampered by misidentification of C. auris as other species, commonly C. haemulonii and Saccharomyces cerevisiae.

Here we evaluate the use of the T2MR platform for the highly sensitive, rapid species level identification of C. auris, C. lusitaniae and C. haemulonii in whole blood samples.
Methods. A multiplex assay targeting C. auris, C. lusitaniae, and C. haemulonii was developed using cultured cells spiked in KEDTA anticoagulated blood from healthy human donors. C. auris isolates received from the CDC were cultured overnight, automated cell counting was used to determine concentration. From this stock, the culture was diluted to a target titer, and inoculated into whole blood, followed by continuous plating to confirm cell titer. Four mL spiked blood samples were processed on the T2Dx Instrument. Results. Sensitive and specific detection of C. auris was achieved direct from blood in less than 4 hours on the T2Dx Instrument. A Limit of Detection (LoD) for C. auris was demonstrated to be ≤10 CFU/mL. T2MR signals of samples spiked with target were approximately 30 times higher than samples with no target present, and no cross reactivity was observed between C.auris, C. haemulonii, C. lusitaniae and C. krusei. Conclusion. Low concentrations of Candida cells can be detected and identified by T2MR. This prototype assay potentially allows for the rapid screening and identification of patients infected with Candida auris with high specificity and sensitivity, aiding in the hospital management and targeted therapy of this emerging multi-drug resistant pathogen.

Disclosures. B. Manning, T2 Biosystems: Employee and Shareholder, Salary; J. L. Snyder, T2 Biosystems: Employee and Shareholder, Salary; B. Chang, T2 Biosystems: Employee and Shareholder, Salary; C. Wong, T2 Biosystems: Employee and Shareholder, Salary; R. Shivers, T2 Biosystems: Employee and Shareholder, Salary; T. J. Lowery, T2 Biosystems: Employee and Shareholder, Salary.

2072. Comparison of One vs. Two BACTEC Myco/F Lytic Bottles for Recovery of Fungi and Mycobacteria

Poomnima Ramanan, MD1; Cathry Schleck, BSEE2; William Harmsen, MSc3; Emily Venter, BSc3 and Nancy L. Wengenack, PhD, FIDSA4; 1Division of Clinical Microbiology, Mayo Clinic, Rochester, Minnesota; 2Division of Biomedical Statistics, Mayo Clinic, Rochester, Minnesota

Session: 236. Diagnostics - Mycology
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Background. Pneumocystis jirovecii pneumonia (PCP) is an opportunistic fungal respiratory infection. The incidence of PCP has decreased among HIV patients, however among non-HIV-negative patients on immunosuppressive drugs; an increase in incidence is noted. In this population, the diagnosis of PCP is difficult because the clinical presentation is atypical and the direct examination (DE) of the respiratory secretions is not diagnostic. In this context, detection of Pneumocystis jirovecii DNA in respiratory secretions by real-time quantitative chain reaction (qPCR) should be useful.

Methods. In order to evaluate the usefulness of qPCR, all patients hospitalized in medicine or intensive care unit (ICU) in a university hospital and having a positive qPCR in respiratory secretions were included in a retrospective study conducted between 2013 and 2016. Based on clinical data, respiratory secretions, imaging and treatment, patients were classified into three groups: certain PCP; possible, or colonisation, irrespective of the value of qPCR.

Results. One hundred and fifty patients, including 38 infected with HIV, were included: 75 in medicine and 75 in intensive care. Ninety patients (60%) had broncho-alveolar lavage. The diagnosis of PCP was considered certain or possible for 52 and 77% of non-HIV patients and 29% of HIV patients. Among the 129 patients with PCP, the hospital mortality was 35.9% in ICU and 21.5% in medicine. The median value of qPCR was 76,650 copies/mL among patients with PCP and 3,220 copies/mL among colonized patients (P < 0.001) with no significant difference in type of respiratory specimen or place of hospitalization. The optimal threshold value of qPCR determined from the ROC curve was 10,100 copies/mL with a sensitivity of 76.6% and a specificity of 86%. Specificity was 100% at the threshold of 59,250 copies/mL.

Conclusion. If qPCR alone is imperfect for the differential diagnosis between colonization and infection, it has the merit of guiding the clinician towards the diagnosis of PCP especially for non-HIV patients whose DE of the respiratory secretions is negative. In this context, detection of Pneumocystis jirovecii DNA in respiratory secretions by real-time quantitative chain reaction (qPCR) should be useful.

Disclosures. All authors: No reported disclosures.

2073. Utility of Serial β-D-Glucan Levels in Patients with High Risk for Invasive Candidiasis: A Potential Tool for Antifungal Stewardship

Alvin Qiija Chua, BSc (Pharm) (Hons)1; Sarah Si Lin Tang, BSc (Pharm) (Hons)2; Shin Yi Ng, MBBS, FBCP3; Winnie Lee, BPharm (Hons), MSc (Epi)1; Eleanor Jing Yi Cheong, BSc (Pharm)(Hons)4; Liwen Loo, BSc (Pharm) (Hons)1; Yvonne Pejan Zhuo, Bsc (Pharm) (Hons)5; Nathalie Grace Sy Chua, Bsc (Pharm) (Hons)6; Cheryl Li Ling Lim, MSc Infectious Diseases1; Maciej Piotr Chlebicki, MBBS, ABIM7; Ban Hock Tan, MBBS, FRCP (UK)8 and Andrea L. Kwa, PharmD9,10; 1Pharmacy, Singapore General Hospital; 2Singapore, Singapore; 3Department of Anaesthesiology, Singapore General Hospital; 4Singapore General Hospital, Singapore, Singapore; 5Department of Infectious Diseases, Singapore General Hospital; 6Singapore General Hospital; 7Infectious Diseases, Duke-National University of Singapore Medical School; 8Singapore, Singapore; 9Department of Pharmacy, Faculty of Science, National University of Singapore; 10Singapore, Singapore

Session: 236. Diagnostics - Mycology
Saturday, October 7, 2017: 12:30 PM

Background. Invasive candidiasis (IC) is a severe infection in which diagnosis is challenging and often made late in the course of infection. Patients with delayed initiation of antifungals have high mortality risk; physicians tend to start empiric therapy at earliest clinical suspicion of IC. Excessive use of antifungals worsens selection pressure for resistance. Thus, alternative ways to aid antifungal stewardship are highly