257. Aspergillus Galactomannan Lateral Flow Assay for Rapid Diagnosis of Invasive Aspergillosis in Bronchoalveolar Lavage

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Background. Early diagnosis and treatment of invasive pulmonary aspergillosis (IPA) remain the most important factor to reduce mortality. Diagnosis remains a challenge, however, due to unspecific clinical presentation and radiological findings. Only very recently rapid tests for IPA have been developed. The objective of this study was to evaluate the performance of the new CE-marked Aspergillus Galactomannan Lateral Flow Assay (LFA; IMMY, Oklahoma, USA; figure) for IPA in patients with and without hematological malignancies.

Methods. The Aspergillus Galactomannan LFA was retrospectively performed according to the manufacturer’s instructions in 106 previously frozen bronchoalveolar lavage fluid (BAL) samples from 106 patients at risk for IPA (23% with underlying hematological malignancies). Samples were collected between September 2016 and September 2018 at the University of California, San Diego. Performance of the LFA was compared with Galactomannan, BAL culture and the Aspergillus-specific LFD (another rapid test for IPA). IPA was classified according to revised EORTC/MSG criteria.

Results. Overall, 22 patients met criteria of probable or proven IPA, 9 possible IPA, while 75 patients did not fulfill criteria of IPA. Sensitivity of the Aspergillus Galactomannan LFA for probable/proven IPA was 77% (17/22). Sensitivity was similar to BAL GM (77% with a cutoff of 1.0 OD1), but higher compared with the Aspergillus-specific LFD (59%), and BAL culture (23%). The LFA resulted negative in 7/9 cases with possible IPA and 47/73 cases without IPA (overall specificity 66%, 54/82). The less than perfect specificity was driven particularly by non-neutropenic patients (specificity 62%, 43/69), while specificity was 85% among patients with underlying hematological malignancies. Lower specificity among non-neutropenic patients was also observed for the BAL GM (overall 77%, non-neutropenic patients 72%), the Aspergillus-specific LFD (overall 70%, non-neutropenic patients 67%) and BAL culture (overall 90%, non-neutropenic 88%).

Conclusion. Our study indicates that the LFA may be useful for rapid diagnosis of IPA in BALF when IPA is clinically suspected. The lower specificity in non-neutropenic patients may be explained by limited applicability of the EORTC/MSG criteria in those patients.

Disclosures. All authors: No reported disclosures.
259. Racial Differences in Clinical Phenotype and Hospitalization of Blastomycosis Patients

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Background. Dimorphic fungal infections, such as blastomycosis, cause significant morbidity and mortality. Most studies describing blastomycosis have focused on non-Hispanic Caucasians and our understanding of the clinical presentation and outcomes for patients of other race/ethnicities is limited. We evaluated whether clinical presentation and disease severity varied across racial/ethnic groups.

Methods. Blastomycosis patients were identified from Marshfield Clinic Health System and patient data were abstracted from electronic medical records. Blastomycosis genotyping was performed for cases with available isolates. Univariate analyses using χ2 tests and multivariate logistic regression modeling were used to determine the association of race/ethnicity with clinical presentation. Significance was defined as P ≤ 0.05.

Results. In total 477 patients were included. Age differences were observed across race/ethnicity categories (P ≤ 0.0001). Non-Hispanic Caucasians were oldest (47 years, SD 20) and Asians were the youngest (30 years, SD 18). Underlying medical conditions were more common in non-Hispanic Caucasians (35%) and African Americans (AA) (52%) than Hispanic Caucasians (27%) and Asians (29%, P = 0.0062). Risk for hospitalization was highest for Hispanic Caucasians (aOR 2.9, 95% CI 1.2–1.7), American Indian Alaskan Native (AIAN) (aOR = 2.4; 95% CI 1.0–5.5), and Asian (aOR = 1.9; 95% CI 1.0–3.6) patients when compared with non-Hispanic Caucasian patients. Ninety percent of B. dermatitidis infections occurred in non-Hispanic Caucasians whereas blastomycosis in Hispanic Caucasian, AIAN, and Asian patients was frequently caused by B. gilchristii (P < 0.0001).

Conclusion. Hispanic Caucasian, AIAN, and Asian blastomycosis patients were younger and healthier, but more frequently hospitalized. Patients in these racial/ethnic groups may need more aggressive treatment and closer therapeutic monitoring. Underlying host factors along with organism virulence likely play a role in these differences.

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