

P0052

Poster Session I

How to improve fungal diagnosis

PERFORMANCE OF SERUM AND BRONCHOALVEOLAR LAVAGE GALACTOMANNAN AND 1,3 BETA-GLUCAN ENZYME ASSAYS WITH COMPUTER TOMOGRAPHY SCANS IN THE DIAGNOSIS OF INVASIVE ASPERGILLOSIS IN IMMUNOCOMPROMISED HOSTS.

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Invasive aspergillosis (IA) has become the leading infectious cause of death in immunocompromised hosts. This is in part due to lack of widely available rapid sensitive, specific, and noninvasive diagnostic tests such as galactomannan (GM) and 1,3 beta-glucan (BG) enzyme immunoassays. **Objectives:** We compared the performance of GM and BG tests in serum and bronchoalveolar lavage fluid (BAL) when paired with computer tomography (CT) scans in the diagnosis of IA in immunocompromised hosts. **Methods:** From December 2008 to March 2013, patients undergoing HSCT, hematologic malignancy, solid organ transplantation (SOT), rheumatologic disease, solid tumor or pulmonary disease were prospectively studied with GM, BG and CT scan. Proven, probable, and possible IA were defined according to the 2002 European Organization for Research and Treatment of Cancer/Mycoses Study Group criteria (EORTC/MSG). GM and BG were not included in probable classification. A total of 186 patients were tested by GM assay and 31 patients were tested by BG assay for the following two groups of patients: those with invasive aspergillosis (IA) and control patients. **Results:** Patients groups included HSCT 40 (34.8%), hematologic malignancy 38 (33%), SOT 25 (21.7%) or other underlying disease (rheumatologic disease, solid tumor and pulmonary disease) 12 (10.0%). Seventeen patients (14.8%) had proven aspergillosis, 22 (19.1%) probable aspergillosis and 76 (66.1%) possible aspergillosis by EORTC/MSG criteria. The sensitivity, specificity, and positive and negative predictive values on serum tests for GM and BG were 64.7%, 94.1%, 73% 91.4% and 100%, 57.1%, 70%, 100%, respectively. The sensitivity, specificity, and positive and negative predictive values on BAL tests for GM and BG were 75%, 92%, 71.4%, 92% and 71.4%, 71.4%, 71.4%, 71.4% respectively. The performance, positivity, of tests for diagnosis for IA in 31 patients showed serum GM 10/31 (32.3%), BAL GM 9/31 (29%), serum BG 23/31 (74.2%), BAL BG 13/31 (41.9%) and CT scan 15 (48.4%). **Conclusion:** In conclusion, GM, BG and CT scan tools are useful tests for the diagnosis of IA in high-risk patients although BG and CT scan showed less specificity. The sensitivity of GM and the specificity of BG on BAL were better compared to GM and BG on serum.