

P0001

Poster Session I

Diagnosis of fungal infections

TEN-YEAR RETROSPECTIVE CASE SERIES OF PATIENTS WITH GALACTOMANNAN ANTIGENEMIA: IMPLICATIONS ON THE USE OF SERUM GALACTOMANNAN ANTIGEN IN THE DIAGNOSIS OF INVASIVE AND NON-INVASIVE ASPERGILLOSIS

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Objectives: Galactomannan antigenemia is a mycological criterion for probable invasive aspergillosis (IA) in the European Organization for Research and Treatment of Cancer/Invasive Fungal Infections Cooperative Group and the National Institute of Allergy and Infectious Diseases Mycoses Study Group Consensus Group (EORTC/MSG) definitions for invasive fungal disease. Although the sensitivity and specificity of serum *Aspergillus* galactomannan enzyme immunoassay (EIA) for the diagnosis of IA have been evaluated in selected patient groups under serial monitoring, data on its use in centers where the test is not serially performed for specific patient groups is lacking. This study describes the epidemiological and clinical characteristics of patients with galactomannan antigenemia over a ten-year period in Hong Kong. The practical implications for using the test in the diagnosis of invasive and non-invasive aspergillosis are discussed.

Methods: All patients with serum samples sent to the clinical microbiology laboratory at Queen Mary Hospital, The University of Hong Kong, for *Aspergillus* galactomannan using Platelia™ *Aspergillus* EIA (BioRad Laboratories, Inc., CA) between 1-July-2003 to 30-June-2013 were included. The epidemiological and clinical data of patients with positive test results were retrieved from the hospital electronic patient record system and entered into a predesigned database for analysis. Patients with >1 positive test results were included once.

Results: A total of 2445 tests from 1811 patients were performed during the study period. One hundred and thirty-seven tests (5.6%) from 114 patients (6.3%) were positive. Among 107 patients with available clinical record, 66 were males and 41 were females. The median age was 53 years. Most patients did not have the classical host factors included in the EORTC/MSG definitions for IA. The most common underlying conditions were hematological malignancies (31.8%), use of corticosteroids/immunosuppressive drugs (29.0%), and chronic pulmonary diseases (27.1%). Most patients (53.3%) had non-neutropenic fever with pneumonia. The most common presenting symptoms were fever (59.8%), hemoptysis (46.7%), and cough (43.0%). The most common radiological abnormality in computerized tomography scans was uni-/multi-lobar consolidations (58.8%). Only 35.3% had the EORTC/MSG-predefined radiological signs for IA. Twenty-nine patients (27.1%) had positive culture for *Aspergillus* species in respiratory tract specimens. According to the EORTC/MSG definitions and the recently proposed category of 'probable IA without specified radiological signs', 5.6%, 7.5%, and 35.5% of the patients had proven, probable, and probable IA without specified radiological signs, respectively, and 51.4% did not have IA. Among those without IA, 38.2%, 9.1%, and 7.3% had received amoxicillin-clavulanate or piperacillin-tazobactam, had non-invasive forms pulmonary aspergillosis, and fungemic penicilliosis, respectively. Nearly half of the patients were started on empirical antifungal treatment before the test result was available.

Conclusion: Galactomannan antigenemia may be clinically significant and represent proven/probable IA, non-invasive pulmonary aspergillosis, or fungemic penicilliosis, even among patients without classical host factors for IA.