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Paper Poster Session
Fungal diagnosis: from culture to molecular techniques

Galactomannan in bronchoalveolar lavage fluid for diagnosis of invasive aspergillosis in non-hematological patients

Jesus Fortun Abete*[1], Pilar Martín-Dávila[2], Elia García G. de la Pedrosa[3], Jose Tiago Sequeira[4], Julio Garcia Rodriguez[5], Davinia De Benito[2], Emmanuele Venanci[2], Fabian Castaño[2], F. Lazaro[6], Santiago Moreno Guillén[7], Jose Maria Aguado Garcia[8]

[1]*Hospital Ramon Y Cajal, Madrid, Spain*

[2]*Hospital Ramón Y Cajal, Madrid, Spain*

[3]*Hospital Ramón Y Cajal, Clinical Microbiology, Madrid, Spain*

[4]*Hospital Doce de Octubre, Madrid, Spain*

[5]*Hospital Universitario La Paz-Carlos III-Cantoblanco, Madrid, Spain*

[6]*Hospital Universitario La Paz, Madrid, Spain*

[7]*Hospital Ramón Y Cajal, Infectious Diseases, Madrid, Spain*

[8]*University Hospital 12 de Octubre, Unit of Infectious Diseases, Madrid, Spain*

Background: The role of galactomannan (GM) in serum or bronchoalveolar lavage fluid (BALF) for the diagnosis of invasive pulmonary aspergillosis has been extensively evaluated in hematology-oncology patients; however, its effectiveness in other types of patients is not well established.

Objective: To compare the yield of BALF GM with that of serum GM, sputum/bronchial wash fungal culture, and BALF fungal culture in the diagnosis of invasive pulmonary aspergillosis in non–hematology-oncology patients.

Material/methods: We performed a multicenter retrospective study in 3 university hospitals in Madrid, Spain between 2010 and 2014. The study population comprised patients with chronic obstructive pulmonary disease (COPD) or immunosuppressive conditions with suspected invasive pulmonary aspergillosis for whom BALF GM was available. Hematology-oncology patients were excluded.

Results: A total of 188 patients were analyzed, and 31 cases of invasive pulmonary aspergillosis (proven or probable) were identified. Patients had COPD (n=35) and immunosuppressive conditions (n=153). The global sensitivity of BALF GM (optical density [OD] ratio ≥1.0) was 77.4%. Sensitivity was higher in patients with immunosuppressive conditions than in patients with COPD (81.8% vs

66.7%; p: 0.38). In COPD patients, the sensitivity of BALF GM (OD ≥0.5, 88.9%) was better than that of BALF GM (OD ≥0.1, 66.67%). With respect to the sensitivity of BALF fungal culture, the sensitivity of BALF GM (OD ≥1.0) increased by 18.2% in patients with immunosuppressive conditions and decreased by 22.2% in COPD patients. No differences were observed for BALF GM (OD ≥0.5). The sensitivity of GM in serum was very poor in both populations (36.4% and 11.6%, respectively).

Conclusions: In the present series, the sensitivity of BALF GM was higher than that of BALF fungal culture for the diagnosis of invasive aspergillosis in patients with immunosuppressive conditions. In patients with COPD, BALF GM does not increase the yield of BALF fungal culture.