INTRODUCTION. Diagnosis of invasive pulmonary aspergillosis (IPA) in ICU patients is problematic as in most cases clinical features are nonspecific and lung biopsies are not always feasible.

OBJECTIVES. To validate a clinical algorithm which aims at discriminating *Aspergillus* colonization in the respiratory tract from probable IPA [1].

METHODS. We report an interim analysis of the AspICU project (www.aspicu.org), a multicenter (n=24) observational survey (Nov 2006-Nov 2009) of all ICU patients with a positive *Aspergillus* culture (n=398). A selection was made of all patients with tracheal aspirates positive for *Aspergillus* spp. and in which histology data were available (either lung biopsy or autopsy). These cases were reanalyzed using a clinical algorithm [1] developed to differentiate colonization from probable IPA. This algorithm considers the presence of *Aspergillus* spp. in tracheal aspirates as IPA if there are (i) compatible clinical signs, (ii) abnormal medical imaging, and (iii) either host risk factors (neutropenia, hematologic malignancy + cytotoxic agents, corticosteroid use, congenital or acquired immunodeficiency) or a broncho-alveolar lavage (BAL) positive for *Aspergillus* on microscopy and culture. The predictive value of this clinical algorithm was subsequently validated using the histology data.

RESULTS. Within a total of 370 patients with *Aspergillus* positive tracheal aspirates, histological data were available in 61 patients. Histology was positive for IPA in 44 cases. Compatible signs and abnormal medical imaging were present in all 44, host factors or positive BAL in 40/44. Hence, all criteria of the algorithm necessary for a diagnosis of probable IPA were present in 90.9% (40/44). Histology was negative for IPA in 17 cases. In 5 of these cases all criteria necessary for a clinical diagnosis of probable IPA were present (29.4%; 5/17). Hence, the clinical algorithm for probable IPA had a specificity of 70.6%, a sensitivity of 90.9%, a positive predictive value of 88.9% and a negative predictive value of 75.0%. Receiver operating characteristic curve analysis showed an area under the curve of 80.7% (95% CI: 66.8-94.7%).

CONCLUSIONS. The proposed clinical algorithm demonstrated favorable operating characteristics, suggesting its usefulness as a clinical tool to discriminate between *Aspergillus* colonization and IPA in critically ill patients.

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