

**P0372**

**Paper Poster Session**

**Fungal infection epidemiology**

**Concomitant respiratory tract infection with influenza virus and *Aspergillus fumigatus*: a 4-winter retrospective study**

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**Background:** Since the 2009 influenza pandemic, invasive pulmonary aspergillosis (IPA) has been increasingly reported as a superinfection in patients with a severe influenza virus infection. The aim of the study was to assess the frequency of patients co-infected by influenza virus and *Aspergillus fumigatus*.

**Material/methods:** All patients admitted in a our University Hospital with a documented influenza infection (positive PCR for influenza virus ((Influenza A/B r-gene, Biomerieux) in nasal swab or broncho-alveolar lavage (BAL)) between 2011 and 2015 (4 winter-periods) were retrospectively included. An influenza episode was defined as a positive PCR for influenza A (IAV) and/or B virus (IBV). For each episode, the presence of *A. fumigatus* in respiratory samples was recorded. When these microorganisms were retrieved concomitantly, clinical and laboratory data were collected and patients classified according to the Blot *et al.* criteria<sup>1</sup>.

**Results:** A total of 481 influenza episodes were included: 463 with single influenza infection (376 IAV and 87 IBV), and 18 with both IAV and IBV. *A. fumigatus* was isolated during the same winter-period in 17 (3.5%) patients: 1 in 2012, 6 in 2013, 6 in 2014 and 4 in 2015. Their mean age was 59± 21 years and 9 (53%) were female. These 17 patients required intensive care unit (ICU) admission and 70% had underlying comorbid illnesses: liver disease (n = 2), hematologic disease (n = 3), transplants recipients (kidney= 2; heart = 2) and inflammatory diseases (n = 3). Eleven and 5 patients had IVA and IVB respectively and one patient had both. Oseltamivir was given to all patients.

Patients were categorized as having putative IPA (n=6), and airway colonization (n=11). Serum or BAL galactomannan was positive for 5/6 patients with putative IPA (p=0.008). IPA diagnosis was performed 14 days before (n=1), the same day (n=3), 6 days (n=1) and 32 days (n=1) after influenza infection

during the same hospitalization. All patients with putative IPA were treated with voriconazole and only 4 (67%) and 8 (72%) survived in the IPA and colonized group, respectively.

**Conclusion:** a pulmonary co-infection with *A. fumigatus* and influenza virus is a severe condition, necessitating ICU hospitalization. The *Aspergillus* isolation in the respiratory tract of patients with severe influenza pneumonia, especially if confirmed by a positive galactomannan measured in serum or BAL, should prompt clinicians to assess the probability of IPA and initiate treatment in high-risk patients.

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<sup>1</sup>Blot *et al.* AJCCM 2012