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Poster Session I

How to improve fungal diagnosis

IMAGING FINDINGS OF INVASIVE PULMONARY ASPERGILLOSIS IN IMMUNOCOMPROMISED CHILDREN

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Objectives: High resolution CT (HRCT) became gold standart for early detection of pneumonia in immunocompromised host and useful in guiding interventions for further microbiological work-up. Radiographic findings in immunocompromised children with invasive pulmonary aspergillosis (IPA) are often unspecific. Our focus was to study radiological signs of IPA in the pediatric population.

Methods: A retrospective review of imaging was performed in 46 consecutive patients (age from 2 to 18 years old) after allogeneic hematopoietic stem cell transplantations (n-36, 78%) and chemotherapy (n-10, 22%) with probable and proven IPA according EORTC/MCG 2008 criteria in 4-year period at a single institution. All patients underwent CT guided bronchoscopy with comprehensive study of bronchoalveolar lavage fluid. The samples obtained were sent to the laboratory for cytology assessment, direct examination, fungal culture and galactomannan test.

Results: Most of the patients (57%) had mixed viral and fungal or bacterial and fungal infections. On CT scan the majority of the patients (62%) had bilateral lung lesions. CT findings of pulmonary disease included predominantly interstitial fluffy infiltrates with ground glass opacity appearance without clear contours (55%). Multiple small nodules (37%), halo signs (27%), infarct-shaped nodules (8%), cavity lesions (3%), air-crescent signs (2%) and peripheral nodular masses with pleural effusions (6%) were less common.

Conclusions:IPA in the pediatric population presents with a wide variety of radiographic findings. Respiratory findings are varied but often not specific, and a high index of suspicion is necessary in immunocompromised patients. In contrast to adult disease, typical CT findings such as nodules, in particular with halo sign, air crescent sign and cavitation in the pediatric population are less common. It might be associated with a high rate of mixed infections in children.