Allergic Bronchopulmonary Aspergillosis (ABPA) in Asthmatic and Cystic Fibrosis Patients

S. Sarrafzadeh[1,*], Z. Pourpak[1], S.D. Mansoori[2], F. Fattahi[1], M. Moin[1]

[1] *Immunology, Asthma and Allergy Research Institute, Medical Sciences/University of Tehran, Tehran, Iran (Islamic Republic of)*
[2] *National Research Institute of Tuberculosis and Lung Disease, Shaheed Beheshti University of Medical Sciences, Tehran, Iran (Islamic Republic of)*

Background: Allergic bronchopulmonary aspergillosis (ABPA) is a disabling lung disease caused by *aspergillus fumigatus*; a saprophytic mold was the most important opportunistic fungal pathogen in humans. ABPA occurs mainly in asthmatics and patients with cystic fibrosis (CF). We aimed to determine ABPA prevalence among these patients over a period of 2 years at the main referral center for immunological disorders in Iran.

Methods: All patients with asthma (47 cases) and CF patients (27 cases) with the pulmonary manifestations suspected to ABPA were referred to Immunology, Asthma and Allergy Research Institute from December 2005 to January 2008. They were screened for ABPA with an aspergillus fumigatus skin test. Patients with positive the skin test were suspected to have ABPA if they met the followed criteria: serum total IgE concentration of >1000 ng/ml, positive specific IgE and IgG in their serum against *A. fumigatus* evaluated with ImmunoCAP and/or RAST assay, proximal or central bronchiectasis seen on the high-resolution CT (HRCT) scan.

Results: During our study from 74 patients screened for ABPA, 28 patients (37.8%) were found to be positive; 40.4% in asthmatic patients (19 cases), and 33.3% in CF patients (9 cases). Among them, 21 patients had positive sputum culture of *aspergillus*.

Conclusion: ABPA is a disease with the clinical signs of asthma which delay of the diagnosis can lead to fibrosis and respiratory failure. The present study indicated that ABPA was prevalent in persistent asthmatic and CF patients respectively. It is advisable that the ABPA diagnostic tests were performed for all suspected patients and prompt treatment in these patients was strongly suggested for prevention of their disease progress.

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Monitoring of Serum Vancomycin Concentrations in Pediatric Patients

G.T. Khotaei[1], R. Omani Samani[2,*], F. Fattahi[3], F. Moetamed[4], F. Nejat[4], M.T. Haghi Ashtiani[4], M. Izadyar[4]

[1] *Infectious Diseases Department, Children Medical Center, Medical Sciences/University of Tehran, Tehran, Iran (Islamic Republic of)*
[2] *Royan Institute, Reproductive Biomedicine Stem Cell Biology, Tehran, Iran (Islamic Republic of)*
[3] *Immunology, Asthma and Allergy Research Institute, Medical Sciences/University of Tehran, Tehran, Iran (Islamic Republic of)*
[4] *Children Medical Center, Medical Sciences/University of Tehran, Tehran, Iran (Islamic Republic of)*

Background: Vancomycin is a glycopeptide antibiotic that kills gram positive bacteria by interfering with cell wall synthesis. The necessity for monitoring serum vancomycin concentrations (SVC) has recently been noticed at many institutions because original concerns for nephorotoxicity have been largely alleviated. We evaluated the SVCs monitoring in pediatric patients, in an effort to identify the variables affecting vancomycin pharmacokinetics; the subtherapeutic or toxic range.

Methods: We reviewed the medical records of all patients older than 60 days of age admitted to Children Medical Center who were received interavenous vancomycin between July 2003 and December 2005. Details of vancomycin therapy, dosage and blood sampling times were obtained. Because pharmacokinetic determination for children with cancer may be different, this group was evaluated separately.

Results: During the study, 167 infants and children without cancer and 42 cancerous patients, aged from 3 months to 17.5 years were treated with vancomycin for the various infections. In 93% children without cancer, peak SVCs was in an adequate therapeutic range with the highest level of 55 μg/ml and lowest of 8 μg/ml. For children with cancer, peak SVCs was below 10 μg/ml in 10% cases, and trough values <5 μg/ml in 21% cases.

Conclusion: Vancomycin remains an effective antibiotic with infrequent discontinuations due to adverse events. Monitoring SVCs should be considered for patients with cancer, neonates, abnormal renal function, those receiving concurrent nephrotoxic drugs such as aminoglycosides and those receiving higher than usual dosages. This empirical dosing method can construct safe and effective vancomycin dosage regimens and help to reduce the toxicity.

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