Respiratory Disease

161. Usefulness of Various Hematological, Biochemical and Immunological Tests in Diagnosing Sarcoidosis in Indian Population

R Sharma, R Guleria, A Mohan, C Das
All India Institute of Medical Sciences, New Delhi 110029.

Sarcoidosis is a granulomatous multisystem disease of young adults. Bilateral hilar lymphadenopathy with or without pulmonary infiltration are common clinical presentation. Numerous biochemical, haematological and immunological tests have been used for the diagnosis of sarcoidosis. We evaluated the diagnostic utility of these tests in patients with radiologic and histologic features (evidence of non-necrotizing granulomas in the involved organs by biopsy) of sarcoidosis in North Indian population.

160 patients (age : 36 ± 15 years) with suspicion of sarcoidosis, presenting in the indoor and outpatients department of the hospital were studied. In addition to clinical examination a complete blood count including total and differential counts (TLC and DLC), ESR, routine Urine and stool examination, liver function tests (LFT) and prothrombin time were done in all patients. Renal function tests were also assessed. Serum and urinary calcium levels were also estimated. Serum angiotensin converting enzyme levels (SACE) was also estimated in all. Mantoux test with 5 TU, injected intracutaneously and read at 48 hours was done on all patients to assess delayed hypersensitivity reaction (also called as cutaneous anergy). Spirometry was done in 92 patients and diffusion lung capacity for carbon monoxide in 80 patients. Bronchoscopic evaluation and transbronchial lung biopsy (TBLB) was done in 133 and 94 patients respectively.

Results: Total and differential counts were normal in almost all the patients (157 out of 160 patients) and showed lymphopenia (lymphocyte count < 1500) in only 3 patients. Erythrocyte sedimentation rate (ESR) was elevated in all and was 44 ± 15 mm in first hour. Mantoux test was negative (< 5 mm induration after 48 hours) in all patients. Hypercalcemia or hypercalciuria, are not reliable tests.

ESR is also useful but non-specific indicator of disease. SACE levels are not consistently elevated in sarcoidosis (elevated in only 50% patients). Lymphocytic predominance of bronchoalveolar fluid (lymphocyte count more than 20% of BAL cells) is also a good indicator of disease activity. Hypercalcemia and hypercalciuria, are not reliable tests.

166. Predictors of Short-Term Morbidity and Mortality in Patients Admitted with Acute Exacerbation of Chronic Obstructive Pulmonary Disease

A Mohan, R Guleria, C Das, S Arora, RM Pandy, AK Singh, R Sharma, C Mohan
All India Institute of Medical Sciences, New Delhi.

Introduction: Acute exacerbations of chronic obstructive pulmonary disease (AECOPD) form a major component of emergency admissions. There is a need to prioritize in-hospital treatment based on the severity of disease. We studied certain simple parameters to predict the patients’ in-hospital outcome at the time of admission.

Methods: Consecutive patients admitted with AECOPD were evaluated and followed up till discharge/death. Various clinical and laboratory parameters were used to predict the study outcomes, i.e. mortality, duration of hospital stay and the need for intubation and mechanical ventilation.

Results: 26 patients were studied (20 males, 6 females). The mean age was 61.35 ± 10.8 years. 15 patients required mechanical ventilation and 9 were admitted in the ICU. Six patients died in hospital. The median duration of stay was 16.5 (1-40) days. 8 patients had respiratory infection and 7 needed inotropic support. The duration of hospital stay correlated with the initial pH (p = 0.04), arterial bicarbonate (p=0.006) and the need of inotropic support (p=0.02). The variables predicting indoor mortality and the need of mechanical ventilation are shown in Table 1.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Yes</th>
<th>Mechanical Ventilation*</th>
<th>P</th>
<th>Yes</th>
<th>Mortality*</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past ICU admissions</td>
<td>0.5</td>
<td>0 (0-2)</td>
<td>0.04</td>
<td>0</td>
<td>0 (0-7)</td>
<td>0.22</td>
</tr>
<tr>
<td>TLC (103 per cmm)</td>
<td>12.1</td>
<td>7.77 ± 2.24</td>
<td>0.01</td>
<td>17</td>
<td>9.22 ± 275</td>
<td>0.24</td>
</tr>
<tr>
<td>Creatinine (mg%)</td>
<td>1.1</td>
<td>1.15 ± .33</td>
<td>0.81</td>
<td>1.55</td>
<td>1.06 ± .26</td>
<td>0.05</td>
</tr>
<tr>
<td>PH</td>
<td>7.25</td>
<td>7.31 ± 0.08</td>
<td>0.25</td>
<td>7.22</td>
<td>7.28 ± 0.10</td>
<td>0.05</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>33.2</td>
<td>32 (25-79.8)</td>
<td>0.55</td>
<td>30.13</td>
<td>35.77 ± 11.81</td>
<td>0.30</td>
</tr>
<tr>
<td>Chest infection**</td>
<td>9</td>
<td>0.001</td>
<td>3</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Ionotropic support**</td>
<td>7</td>
<td>0.008</td>
<td>3</td>
<td>2</td>
<td>0.04</td>
<td></td>
</tr>
</tbody>
</table>

*Values are expressed as mean SD or median (min.-max.); **Denote absolute number of patients.
The need of mechanical ventilation was significantly dependent on the number of prior ICU admissions, total leucocyte count, presence of chest infection and the need of ionotropic support. Mortality correlated significantly with the baseline pH, serum creatinine and requirement of ionotropic support.

Conclusion: A focused history, physical examination and simple baseline laboratory parameters can provide important information regarding morbidity and mortality in admitted patients of AECOPD. This can allow early risk-stratification and optimal medical care.

*176. To Study the Polymorphism of Glutathione S Transferase M1 (GSTM1) and Glutathione S Transferase T1 (GST T1) Gene in Patients of Chronic Obstructive Airway Disease (COAD)

S Mehrotra, JK Sharma, A Sharma, S Kumar
Maulana Azad Medical College and Associated Lok Nayak Hospital, New Delhi.

Objective: Cigarette smoking is the most important risk factor leading to development of COAD. Smoking accounts for as much as 80-85% cases of COAD while only 15% smokers develop clinically symptomatic COAD.

One possible reason why only a small proportion of smokers develop COAD might be genetic variation in the enzymes that detoxify cigarette smoke products. We therefore studied the frequencies of genetic polymorphisms of GST M1 and GST T1 in patients with COAD and healthy subjects to determine whether multiple polymorphisms of these genes are linked to a genetic susceptibility to COAD.

Material and Methods: The study was carried out in the Department of Medicine, Maulana Azad Medical College and Associated Lok Nayak Hospital and Division of Cytogenetics, Institute of Cytology and Preventive Oncology, Maulana Azad Medical College, New Delhi, India.

The study comprised of 60 cases. The control group comprised of 30 cases. All control subjects were male and were current smokers free from pulmonary disease with normal PFT. None of the control subjects had family members affected by COAD.

Subject selection: The study group comprised of 30 cases. Men with COAD in age group 30-60 years were taken, diagnosis of COAD being made on the basis of history, clinical examination, radiological examination, ABG and pulmonary function test (PFT).

The genotypes of cases and control were determined by polymerase chain reaction for GST M1 and GST T1 genes.

Result: The mean age in the study group was 51.67 ± 8.9 and in the control group was 51.40 ± 7.65. The age distribution between the cases and controls was not statistically significant (p = 0.91).

The average pack years in the case group was 20.77 ± 7.754 whereas it was only 10.27 ± 2.913 for the control group which was statistically significant (p < 0.001). 16.7% (5/30) of COAD cases were GSTM1 null in comparison to 33.3% (10/30) in controls which was not statistically significant (p = 0.135). A total of 40% (12/30) of the cases presented homozygous deletion of GSTT1, genotype as compared to controls 13.3% (4/30) which was statistically significant (p = 0.019).

An attempt was made to evaluate the proportion of the cases that were null for both genotypes GSTM1 and GSTT1. It was observed that COAD cases had marginally higher proportion of subjects who had the homozygous null genotypes of both GSTM1 and GSTT1 as compared to controls. However, differences were not statistically significant (p = 0.35).

Conclusion: In summary, we have shown that GSTT1 null genotype might be associated with the pathogenesis of COAD.

705. Clinical Evaluation and Immunochemical Characterization of Borassus flabellifer Pollen Allergy from Mumbai (India) City

UD Mahadik-Salvi, PV Niphadkar, HL Dhar
Bombay Hospital Trust, and Sir HN Hospital, Mumbai.

Pollens of Borassus flabellifer (BF) a famous Palm tree exhibits monocolpate and ellipsoidal pattern under electron microscopy. Aerobiological studies in Mumbai City’s atmosphere showed the high prevalence of pollens of BF. 355 patients with allergic rhino-bronchitis were investigated for eosinophilia, SPT (Skin Prick Test), estimation of total and allergen specific IgE, nasal provocation test (NPT) and immunoblot studies. 9% out of 355 patients, gave strong positive response to BF. In 5/10 (50%) BF sensitive subjects, NPT using allergenic extract of BF showed definite decrease in nasal airflow. In 11/15 (73%) BF sensitive patients, specific IgE ELISA showed PR/NCR (Patients reading/normal control reading) ratio of 5 or more. Allergenic extract of BF resolved into 25-30 Coomassie blue stained protein bands in the MW range of 10-100 kDa on 12.5% SADS-PAGE gel. The IgE binding patterns of individual patients emphasize the predominance of 86, 76, 62, 45 and 40 kDa proteins in terms of their allergenicity indicating the major allergenic fractions in BF. The present study establishes the allergenicity of BF pollen on atopic patients and suggest the inclusion of BF pollen in testing kit for allergic patients.

* Adjudged Best Papers and got an award of Rs. 1000/- each from Chairman Scientific Committee, Diamond APICON 2005.