Lung function in Adamantiades–Behçet disease

Sir, Adamantiades–Behçet disease (A-BD) is a multisystemic inflammatory relapsing disease of unknown aetiology, mainly characterized by recurrent aphthous and genital ulceration, skin involvement, uveitis, arthritis, venous occlusion and neurological disorders [1, 2]. Males and young people frequently have more severe disease [3]. Recently, internationally agreed diagnostic criteria have been proposed [4]. Lung function in A-BD has been under investigation for many years with controversial results [5]. It seems that the major lung dysfunction is that of airways obstruction, with a decrease in diffusion capacity.

In order to evaluate lung function in A-BD, we studied 14 non-smoking patients (seven males, seven females) fulfilling the international criteria [4] for the diagnosis of A-BD, aged 16–52 yr. Disease duration ranged from 2 to 7 yr. All these patients, without any obvious evidence of lung involvement, had a normal chest X-ray and no respiratory symptom or sign. Forced expiration was performed and the forced expirogram obtained. From this expirogram, the forced vital capacity (FVC), the forced expiratory volume in the first second (FEV₁) and the total corrected effective time (teff₆₀) were calculated [6]. The patients then performed the helium closed-circuit test, and the functional residual capacity (FRC) and total lung capacity (TLC) were evaluated [7].

Respiratory system resistance (Rrs) was measured by the interruption technique. The physiological dead space, as the ratio Vₐ/Vₜ, and the value of PAO₂ (alveolar oxygen) were calculated according to a new method, the helium wash-out technique [8]. From the value of PAO₂ and the measured value of PaO₂, the alveolar–arterial oxygen difference (A-αDO₂) was calculated.

In Table 1, the number of patients with an abnormal value is shown. Normal values were taken from a group of normal non-smoking individuals according to age, sex, height and weight.

A statistical analysis (paired t-test) was used to evaluate the results. The data obtained from the analysis are shown in Table 2.

Pulmonary vascular tree involvement has been reported and in some studies the prevalence of lung involvement approaches 5% of patients with A-BD [9].
The patients described are mainly young men and the main pulmonary manifestations are haemoptysis, pleuritic chest pain and cough. Alterations of lung function tests in A-BD, without clinical pulmonary disease, are uncommon [10]. There are only a few references to lung function in A-BD. In a few cases, airways obstruction has been noted. In a study of five cases with A-BD, reversible obstruction was noticed in one [5].

Recently, at the VIIth International Conference on Behc¸et’s Disease, Formiga et al. [10] reported the results of pulmonary function, by measuring vital capacity (VC), FEV₁, FEV₁/VC, TLC, residual volume (RV), RV/TLC and transfer lung capacity in 11 selected patients with Behc¸et’s disease, without respiratory symptoms. From these patients, those with previous bronchial asthma or pulmonary disease were excluded. In nine of these patients, the pulmonary function tests were strikingly normal, one patient had mild restrictive lung disease [10]. Correspondence to: G. Vaiopoulos, First Department of Internal Medicine, University of Athens Medical School, Laiko General Hospital, Agiou Thoma 17, Goudi, Athens 115 27, Greece.

The abnormality in pulmonary function does not relate to the asymptomatic stage of disease. The results shown in our study suggest that for better evaluation of lung function in A-BD, more sophisticated tests, such as the measurement of V/D VT or Rrs or A-aDO₂, need to be performed. Lung volumes seemed to be unaffected in our patients, probably due to their asymptomatic stage of disease.

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Table 1. The number of patients with an abnormal or normal value

<table>
<thead>
<tr>
<th>Values</th>
<th>FVC</th>
<th>FEV₁</th>
<th>teffRC</th>
<th>TLC</th>
<th>FRC</th>
<th>V/D VT</th>
<th>PaO₂</th>
<th>A-aDO₂</th>
<th>Rrs</th>
</tr>
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<tbody>
<tr>
<td>N</td>
<td>11</td>
<td>12</td>
<td>7</td>
<td>11</td>
<td>7</td>
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<td>5</td>
</tr>
<tr>
<td>↑</td>
<td>–</td>
<td>–</td>
<td>4</td>
<td>–</td>
<td>–</td>
<td>10</td>
<td>–</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>↓</td>
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<td>3</td>
<td>7</td>
<td>–</td>
<td>4</td>
<td>4</td>
<td>–</td>
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</tr>
</tbody>
</table>

N, normal value; ↑, increased value; ↓, decreased value.

Table 2. P values for all parameters

<table>
<thead>
<tr>
<th>FVC</th>
<th>FEV₁</th>
<th>teffRC</th>
<th>TLC</th>
<th>FRC</th>
<th>V/D VT</th>
<th>PaO₂</th>
<th>A-aDO₂</th>
<th>Rrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>&lt;0.0001</td>
<td>&lt;0.0005</td>
<td>&lt;0.0005</td>
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</table>

NS, non-significant.