our opinion, it is essential first to establish the mode of response in the normal population in a specified protocol and to use this as a standard for the estimation of EIB. Our experience of a group of 48 normal children suggests that a reduction in FEV₁ of 15 percent is too great and that 10 percent would be more appropriate for the detection of EIB.

We recently have studied the response to exercise in 70 atopic asthmatic children (Table 1). The MEFV curves were obtained before and then 2, 5, and 10 min after 6 min of free-running exercise. The FVC, FEV₁, PEFR, FEF₂₅-₇₅, and FEF₇₅ were recorded, and responders were defined as having a fall greater than normal group mean, 2SD in any of the parameters used (ie, >10 percent fall in FEV₁ and FVC, >17.5 percent in PEFR, >26 percent in FEF₂₅-₇₅, and >40 percent in FEF₇₅). There was a marked reduction in all pulmonary function tests (Table 1) with the greatest drop being at 5 min post exercise. The pattern of response indicated that changes occurred both in the large and in the small airways. Sixty-three patients had a positive response to exercise in at least one of the five tests used, and the combination of FEV₁ and FEF₂₅-₇₅ enabled detection of all responders.

Our results strongly suggest that by using more than one MEFV curve parameter, additional valuable information is provided. We would, therefore, support the approach proposed by Haas et al.¹ that integrates changes in all MEFV curve parameters to clinical symptoms, history, and other important factors.

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REFERENCES


To the Editor:

We appreciate the comment of Dr. Čustović et al regarding our article. We all agree that the best approach to assessing exercise-induced bronchospasm (EIB) integrates changes in all MEFV curve parameters with clinical symptoms, history, and any other relevant factors.

The difference between their criteria and ours in judging a subject as a responder or not reinforces the difficulty in setting arbitrary criteria based on only one parameter. Dr. Custovic et al's FEV₁ criterion, for example, was more inclusive than ours was, ie, >10 percent compared to our 15 percent. This difference may explain why, if based on a single criterion, only 74 percent of our group as compared with 89 percent of their group were judged as responders.

We would also like to comment on yet another pattern of response, one seen primarily in patients who exhibit an obstructive flow-volume curve pattern before exercise. The PFTs shown in Table 1 were obtained from a 63-year-old fire fighter with EIB symptoms, before and after a 12-min cold air and exercise provocation test. The patient pedalled a bicycle ergometer at 60 revolutions per minute. The load was progressively increased over 3 min until his heart rate reached a steady state between 150 to 160 beats per minute. He breathed room air for the first 6 min and—5°C for the last 6 min. By conventional criteria, this subject does not have EIB (column 3). If, however, a top-to-bottom index (ie, maximum reduction in parameters after exercise compared with maximum increases during or immediately after exercise) is used, as was suggested by Godfrey,¹ this subject would clearly be highly responsive (column 4). Should the magnitude of the dilatory component, therefore, be taken into consideration when evaluating EIB? Our contention is that it should be taken into account; therefore, this patient qualifies as being EIB susceptible.

It is evident from the brief discussion in our article, Dr. Čustović's letter and this individual case that there are still many nuances needing elucidation before we can successfully devise a foolproof diagnostic algorithm for the assessment hyperactive airways.

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REFERENCE


Amylase Concentrations in Pleural Effusions

To the Editor:

We read with interest the article by Joseph et al.¹ in which a prospective study of amylase-rich pleural effusions was reported. The authors found 25 cases of amylase-rich effusions by analysis

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Table 1—Comparison of Parameters Obtained From Flow-Volume Curves Before and After an Exercise/ Cold Air Provocation Test

<table>
<thead>
<tr>
<th></th>
<th>Baseline</th>
<th>30-s post</th>
<th>6-min post</th>
<th>Top/Bottom Index*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual</td>
<td>% Pred</td>
<td>Actual</td>
<td>% Pred</td>
</tr>
<tr>
<td>FVC (1)</td>
<td>3.61</td>
<td>86</td>
<td>4.06</td>
<td>12</td>
</tr>
<tr>
<td>FEV₁ (1)</td>
<td>2.47</td>
<td>72</td>
<td>3.02</td>
<td>23</td>
</tr>
<tr>
<td>PEFR (1/s)</td>
<td>7.77</td>
<td>93</td>
<td>8.10</td>
<td>4</td>
</tr>
<tr>
<td>FEF₂₅-₇₅ (1/s)</td>
<td>1.48</td>
<td>42</td>
<td>2.34</td>
<td>58</td>
</tr>
</tbody>
</table>

*[(30 s post-6 min post)/30 s post]-100.