Birth weight and adult lung function in China

In a study published in Thorax in 1997 Steen and colleagues’ showed that birth weight was associated with adult lung function in an Indian population. We have carried out a similar analysis in a Chinese cohort of 59 men and 61 women born in Hong Kong in 1967 and followed up in 1997. This Hong Kong study has been described recently and has shown a significant inverse association between size at birth and adult blood pressure. Spirometric tests were performed according to the American Thoracic Society’s criteria to assure the quality.

The study was conducted in the Thoracic Medicine Unit, and was supported by grants from the University of Hong Kong and the Chinese Medical Council. All participants gave informed consent to participate, and the study was approved by the local institutional review board.

Hyperventilation syndrome

The editorial by Dr Gardner on controversial aspects of the hyperventilation syndrome (HVS) refers to our recent study in the same issue of Thorax. This study showed that patients with HVS have an accentuated increase in ventilation as a response to change in body position from supine to standing. The editorial was a valuable addition to our difficult subject. We feel, however, that the interpretation of our paper in the editorial did not quite match the purpose or the message of the original study.

We agree with Dr Gardner that the definitions of HVS in the literature are unfortunately variable. Dr Gardner suggests that the term HVS should be abandoned and that efforts should be made to find the initiating and sustaining causes of hyperventilation. This is also our strategy, so the subjects in our study underwent a comprehensive set of cardiopulmonary examinations. In clinical practice, however, the aetiology of hyperventilation often remains unknown and the only finding may be a disproportionate ventilatory pattern with resulting hypocapnia and alkalosis which may (at least partly) be the sustaining cause of the symptoms. Why would we not call the disorder HVS? An alternative interpretation of the “unknown hyperventilation” which does not assure the patient of the benign nature of the condition was that Dr Gardner suggests that our subjects “fit into a classification of hyperventilation and air hunger with secondary intermittent hyperventilation”. This classification would probably include the whole spectrum of so-called diagnoses of hyperventilation and it is not justified, when several diagnostic procedures have been performed, to exclude cardiopulmonary diseases when the ventilatory component of the disorder has been objectively documented.

In contrast to Dr Gardner, we also believe that the finding of hyperventilation may be of importance when the initiating cause is known, since not all patients with cardiopulmonary diseases have such a tendency. The assessment of eventful panic disorder, symptom criteria described by the World Health Organization for research were used. Contrary to what Dr Gardner states in his editorial, the diagnosis of HVS in the study was based on episodic symptoms typical of HVS and documented respiratory alkalosis (with consequent hypocapnia) in the arterial blood during such an episode. We consider this to be close to the original definition by Geisler et al. The approach to the definition of HVS was therefore physiolog-ical and unambiguous. As this was clearly described in the study, it is difficult to understand the confusion by Dr Gardner when he claims that the diagnosis was made in the presence of normal PaCO2. The measured orthostatic response which was the object of investigation is another matter and should not be confused with the process of diagnosis.

Finally, we would point out that the main purpose of our paper was to describe the accentuated breathing response to orthostatic changes in patients with HVS. We hope that this finding will add to the knowledge of the causes and mechanisms of hyperventilation called for by Dr Gardner. Contrary to the repeated claim in his editorial, our intention was not to present the orthostatic test as a diagnostic criterion for HVS nor as a basis for its diagnosis—assessment of these patients

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Birth weight (kg) n FEV1 (%) FVC (%)<sup>1</sup>
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<sup>1</sup> Using birth weight as a continuous variable.

<table>
<thead>
<tr>
<th>Birth weight (&lt;2.5 kg)</th>
<th>4</th>
<th>3.09 (0.29)</th>
<th>3.64 (0.33)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.50-2.74</td>
<td>18</td>
<td>3.24 (0.46)</td>
</tr>
<tr>
<td></td>
<td>2.75-2.99</td>
<td>26</td>
<td>3.38 (0.32)</td>
</tr>
<tr>
<td></td>
<td>3.00-3.24</td>
<td>36</td>
<td>3.34 (0.44)</td>
</tr>
<tr>
<td></td>
<td>3.25-3.49</td>
<td>19</td>
<td>3.34 (0.41)</td>
</tr>
<tr>
<td></td>
<td>3.50-3.74</td>
<td>11</td>
<td>3.32 (0.26)</td>
</tr>
<tr>
<td></td>
<td>&gt;3.75</td>
<td>6</td>
<td>3.36 (0.37)</td>
</tr>
</tbody>
</table>

For trend: 0.36 0.87 0.30

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