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Bronchial lability in cystic fibrosis

Sir,

Counahan and Mearns (1975) report an abnormal degree of bronchial lability in patients with cystic fibrosis, a finding which was also reported by Day and Mearns in 1973. In order to measure lability they describe two alternative indices. The Exercise Lability Index (ELI) which is the rise in PEF plus the fall in PEF expressed as a percentage of the value *at rest*. Secondly, a modification of the Jones Lability Index (JLI) which is the highest PEF (exercise only) minus lowest PEF, expressed as a percentage of the *predicted normal* PEF, the modification being omission of a bronchodilator agent to reinforce the bronchodilator effect of brief exercise in order to obtain the highest PEF.

It has always seemed to me that the use of the ELI distorts results and may be misleading because a falsely high value for lability is obtained when the PEF at rest is low. It is incorrect to compare percentage values from such patients with percentage values from those with figures at rest which are near to normal.

The JLI avoids this distortion (Jones, 1966). Counahan and Mearns found in CF that the JLI was normal at 18%, whereas the ELI was abnormal at 24%. Day and Mearns (1973) got into a similar difficulty for the same reason. I do not suggest that a proportion of CF patients do not have abnormal lability but would maintain that the ELI introduces inaccuracy which may blur the distinction between CF and other respiratory conditions and may lead to the postulation of problems concerning lability in CF which do not necessarily exist.

Failure to use a bronchodilator agent to reinforce brief exercise may also cause distortion but in the opposite direction, i.e. it gives a lower figure for lability and one is left uncertain to what extent a low PEF at rest is due to a labile as opposed to a fixed increase of airway resistance.

While these points do not invalidate this valuable and interesting piece of work, they do influence conclusions. Much confusion has arisen in published reports on this subject due to the reporting of experimental data from exercise tests which were technically at fault.

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