Correspondence

Heart rate variability in healthy subjects: effect of age and derivation of normal ranges for tests of autonomic function

Sir,


(a) The confidence limits obtained are lower than in previous studies. This is attributed to the larger number and more uniform age distribution of the subjects. Differences in selection criteria and test procedures are, however, another explanation. More information should, therefore, be provided on the subjects and test conditions such as values for resting heart rate, supine blood pressure, the time of the day the experiments were performed, and the intake of coffee and cigarettes before the experiments.1

(b) Information is not given on the period of supine rest before the patient stood up. This is an important omission since we have shown that the duration of rest before standing has a profound (20–40%) influence on the magnitude of the initial heart rate response induced by standing up.2 3 5

(c) The instant at which the initial peak heart rate increase evoked by standing up was observed by O'Brien et al seems to have occurred earlier than we found in our studies.2 3 5 This is not surprising since the recording was not started at the onset of standing up,2 but at the moment the subject became erect. The latter procedure is not correct from a physiological point of view.3

(d) I agree that cardiovascular autonomic function should be assessed by a combination of tests and that the establishment of normal ranges in relation to age is also important. But ultimately an understanding of the physiological mechanisms involved is the most important factor.3 5 6

Unfortunately, O'Brien et al leave us with much numerical information, but little physiological interpretation.

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References


This letter was shown to the authors, who reply as follows:

Sir,

We are grateful for Dr Wieling’s comments but feel that he may have misinterpreted the purpose of our study: this was to provide a practical and reliable basis for the detection of impaired heart rate variability, not a physiological interpretation of our tests. These are used widely in routine clinical practice under uncontrolled conditions. We choose, therefore, to investigate normal subjects under similar circumstances, not under carefully controlled laboratory conditions. Heart rate variability is subject to a host of environmental, psychological, and neurohormonal influences that all contribute to the large coefficients of variation observed with these tests.1 2
Subjects were tested between 9 am and 5 pm. Resting heart rate was recorded after 5–10 minutes of supine rest and only when the usual initial fluctuations in heart rate had subsided. No restrictions were imposed on consumption of coffee or cigarette smoking. While this may have influenced the results, so may other factors such as the time from the last meal, anxiety level, room temperature, etc, etc. All subjects were supine for 10–20 minutes before standing, thus it is unlikely that the results would be spuriously low. It is unrealistic to expect the timing of peak heart rate on standing to occur within a narrow range in 500 subjects. Our only comment on the latency of the heart rate changes on standing was that they are not accurately represented by the 30:15 ratio.

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References

Notices

British Cardiac Society

The Annual General Meeting for 1987 will take place in Dundee on 8 and 9 April 1987, and the closing date for receipt of abstracts will be 6 January 1987.

The Autumn Meeting will be held at the Wembley Conference Centre, London, on 24 to 26 November 1987, and the closing date for receipt of abstracts will be 10 July 1987.

Electrocardiology

The 14th International Congress on Electrocardiology will be held in East Berlin on 17 to 20 August 1987. Details from: Dr Peter W Macfarlane, University Department of Medical Cardiology, Royal Infirmary, 10 Alexandra Parade, Glasgow G31 2ER, Scotland.
The authors reply

I A D O'Brien and R J M Corrall

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