LETTERS TO THE EDITOR

Importance of Tachogram Length and Period of Recording during Noninvasive Investigation of the Autonomic Nervous System

Anthony S. Leicht, BAppSc(Hons) GDip(FET), Ph.D., ESSAF, FECSS, and Fiona L.S. Young, BSpExSc(Hons)

From the Institute of Sport and Exercise Science, School of Public Health, Tropical Medicine and Rehabilitation Sciences, Faculty of Medicine, Health and Molecular Sciences, James Cook University, Townsville, QLD, Australia

Ann Noninvasive Electrocardiol 2012;17(2):156

I read with great interest the recent work of Grant and colleagues¹ that was recently published in the April 2011 issue. Of particular interest was that most 3-minute HRV measures were stable during supine rest but varied during the first 3-minutes of standing, most likely due to baroreflex mediated changes.² Further, these authors highlighted the need for standardized recording times for supine and standing HRV. Coincidentally, within the same week, we published similar work examining the short-term stability of HRV with a recommendation of a standardized protocol for the recording of HRV during supine, seated, and standing positions.³ While the studies differed in HRV recording length (10- vs. 3-minute), HRV analysis software (AD Instruments vs. Biomedical Signal Analysis Group), populations (males and females vs. not stated), the combined results indicate that once a participant has established a resting position, all HRV measures remain stable for at least 10 minutes

with measures of sole parasympathetic modulation stable for up to 40 minutes. Consequently, our recommendation of a standardized protocol for the recording of resting HRV³ and the recent work of Grant et al.¹ highlight an important methodological issue that influences HRV comparisons for healthy populations. It remains to be seen whether similar HRV kinetics exist for populations of various clinical pathologies.

REFERENCES

1. Grant CC, van Rensburg DC, Strydom N, et al. Importance of tachogram length and period of recording during noninvasive investigation of the autonomic nervous system. *Ann Noninvasive Electrocardiol* 2011;16:131–139.
2. Akselrod S, Gordon D, Ubel FA, et al. Power spectrum analysis of heart rate fluctuation: A quantitative probe of beat-to-beat cardiovascular control. *Science* 1981;213:220–222.
3. Young FLS, Leicht AS. Short-term stability of resting heart rate variability: Influence of position and gender. *Appl Physiol Nutr Metab* 2011;36:210–218.

Address for correspondence: Anthony Leicht, BAppSc(Hons) GDip(FET), Ph.D., ESSAF, FECSS, Institute of Sport and Exercise Science, School of Public Health, Tropical Medicine and Rehabilitation Sciences, Faculty of Medicine, Health and Molecular Sciences, James Cook University, Townsville, QLD, 4811, Australia. Fax: (07) 478d1 6688; E-mail: Anthony.Lleicht@jcu.edu.au