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Abstract Details

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Abstract

TITLE: SHORT-TERM TIME DOMAIN (TD) HEART RATE VARIABILITY(HRV):COMPARISONS WITH 24HR HOLTER MONITORING (HM)

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ABSTRACT BODY: Introduction: HRV, a marker of autonomic function(AF) and mortality risk, has been used in our Geriatric Heart Failure Clinic to maximize therapy. Usually, HRV is derived from 24-hr HM recordings. However, elderly often find it too cumbersome to tolerate. Short-term monitoring would promote compliance. Ansar Inc. has developed a system (ANX-3.0) which computes TD and frequency-domain (FD)HRV in 15.5 min. The method has not been validated in elderly. This requires direct comparisons with simultaneously recorded HM.
Methods: Simultaneous 24hr HM and 15.5 min ANX recordings were obtained from 20 ambulatory, elderly (70-90 yrs)(18M,2F).Eight patients were excluded because of ectopic rhythm. The 12 patients studied ranged in age from 70-90yrs.HRV was computed for each 24hr HM, including the initial 15-min when ANX also was being recorded & for each ANX recording using 3 standard TD measures (rMSSD,pNN50, SDNN).ANX records included periods of rest; deep breathing; Valsalvas & a rapid postural change. TD HRV from HM (24 hr & initial 15 min) were compared with ANX records using SPSS 11.0 Statistics Program. Correlations were determined using Spearman rank test(p<0.05).

Results: Comparisons between TD HRV parameters determined from HM (24hr & 15min)& ANX recordings revealed comparable results for all but one pairing (See Table).Correlations between the 24hr Holter & ANX SDNN (0.54) represent the exception(p<0.068).SDNN values determined from 15min HM & 15min ANX recordings correlated well (0.63,p=0.027).RR-intervals, rmsSD & pNN50 for both the HM(24hr & 15min)& the ANX recordings also were well correlated.

Conclusions: *The data support the hypothesis that TD HRV values computed from short-term ANX recordings correlate very well with determinations from HM. The high levels of correlation suggest that the ANX methodology provides a useful & well tolerated tool for quickly obtaining HRV(AF) analysis in the elderly, particularly in the office setting.*

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Comparison of HRV for HM &ANX

15-min ANX Recording	24 hr HM	15 min HM
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	r	p	r	p
RR Interval	0.82**	0.001	0.95**	0.000
SDNN	0.54	0.068	0.63*	0.027
rMSSD	0.78**	0.003	0.82**	0.001
pNN50	0.62*	0.043	0.72**	0.008

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level