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VALIDATION STUDY REPORTS:

1. A COMPARISON OF NERVE-EXPRESS AND CHRONOS ALGORITHMS.

2. REPORT OF PHASE 2A: COMPARISON OF NERVE-EXPRESS AND CHRONOS DATA ACQUISITION AND POWER SPECTRAL ALGORITHMS IN HEALTHY VOLUNTEERS.

3. REPORT OF PHASE 2B: COMPARISON OF NERVE-EXPRESS AND CHRONOS DATA ACQUISITION AND POWER SPECTRAL ALGORITHMS IN PATIENTS WITH HEART DISEASE.

College of Physicians & Surgeons of Columbia University

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June 5, 1998

Alexander Riftine, Ph.D.
President
Heart Rhythm Instruments, Inc.
100 Overlook Terrace, Suite 316
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Dear Dr. Riftine:

Enclosed is a report from the Research Holter Laboratory Columbia University, on our study comparing the Nerve Express Algorithm with the CHRONOS algorithm. The statistical analysis conducted by Dr. Michael Parides shows excellent agreement between the two algorithms.

Sincerely yours,

J. Thomas Bigger, Jr., M.D.
Professor of Medicine and
of Pharmacology

JTB :edr

1.riftine01

A COMPARISON OF NERVE EXPRESS AND CHRONOS ALGORITHMS

A. Statement of Study Purpose

Heart Rhythm Instruments, Inc. has developed algorithms for power spectral analysis of RR intervals (the Nerve Express algorithms). Heart Rhythm Instruments, Inc. has packaged the Nerve Express algorithms in an instrument suitable for stand-alone office use. The purpose of this evaluation was to compare the Nerve Express algorithms with the "gold standard" CHRONOS algorithms to test the reliability of the Nerve Express algorithms for power spectral analysis of RR intervals. The CHRONOS algorithms have been shown to predict death in coronary heart disease and to quantify physical fitness, but they are accessed via Holter technology and are not packaged as a stand-alone office instrument. The Nerve Express algorithms are conveniently packaged for office use. If they are equivalent to CHRONOS, they would constitute a reliable office system useful for many purposes: assessment of risk in cardiovascular disorders; assessment of physical fitness; documentation of benefit for cardiac, chiropractic, or orthopedic rehabilitation; and quantification of drug effects on the autonomic nervous system.

B. Background and Rationale

Power spectral measures of normal RR intervals recorded for a short (5 minute) or long (24-hour) period of time predict cardiac death in patients with coronary heart disease or valvular heart disease and in random samples of middle-aged persons (1-10). Power spectral measures of normal RR intervals also provide an excellent measure of physical fitness (11-14). Short-term recordings of the ECG show cyclic fluctuations that are well characterized by frequency domain methods, either non-parametric fast Fourier transforms or parametric autoregression (15-17). These methods are capable of quantifying the energy of cyclic fluctuations in RR intervals. The joint Task Force on Heart Rate Variability of the European Society of Cardiology and the North American Society for Electrophysiology and Pacing recommended that, for assessment of autonomic modulation of RR intervals, frequency domain methods be applied to 5-minute ECG recordings (17). Frequency domain analysis reveals two peaks of energy (power) in the power spectra obtained with these methods: a low frequency peak (LF) that represents modulation of RR intervals by baroreflex activity and a high frequency peak (HF) that represents modulation of RR intervals by breathing. The vagus nerve carries efferent impulses in both cases. High values for measures of RR interval variability indicate greater physical fitness and a prognosis.

The CHRONOS algorithms developed jointly by The Research Holter Laboratory at Columbia University and Dr. Jeffrey N. Rottman are the best-documented algorithms for predicting cardiac death in patients with coronary heart disease (18). However, data for the landmark studies with the CHRONOS algorithms were acquired using Holter recorders, a cumbersome way to acquire short-term data in the office. Also, highly trained research technicians have extensively edited ECG recordings before the CHRONOS algorithms are applied to them.

Nerve Express is a PC-based system for assessing the state of the autonomic nervous system using proprietary power spectral technology developed over a 15-year period. The algorithms are packaged for convenient office use, but the ability of the Nerve Express algorithms to predict cardiac death or physical fitness has not been validated. The purpose of the current research is to test the reliability of the Nerve Express algorithms for power spectral analysis of RR intervals by comparing them with the CHRONOS algorithms.

If the Nerve Express algorithms prove reliable for predicting death and/or predicting physical fitness, this system will be the first convenient, inexpensive tool for the office assessment of cardiovascular risk and physical fitness will finally be available.

The Research Holter Laboratory at Columbia University has conducted many studies to document the ability of the CHRONOS algorithms to predict cardiac death and/or physical fitness. Heart Rhythm Instruments, Inc. has developed Nerve Express algorithms to analysis fluctuations in RR intervals. Among these are routines to process artifact and ectopic beats in the RR data stream. These routines have the potential to make Nerve Express more fully automated which will not only broaden the venues in which the instrument can be used but also decrease the cost of assessing the autonomic nervous system by reducing expensive technician time.

C. Nerve Express Algorithm Validation Procedure

The algorithm validation procedure compared power spectral results computed by the Nerve Express algorithm (Heart Rhythm Instruments, Inc.) to reference values computed from the same data by the CHRONOS algorithm (Columbia University). Input data were RR interval series from 80 Holter ECG recordings, 40 from a sample of patients with recent myocardial infarction and 40 from a sample of healthy, middle-aged persons. The post-infarction sample is a randomly chosen subset of the Multicenter Post Infarction Program (MPIP) and the healthy sample a randomly chosen subset of a natural history study of middle-aged male factory workers in Sweden.

Short (448 RR interval) segments were "cut" from each recording. The post-infarction group's recordings were 24 hours long, and for each recording the segment was cut at a random time during the day (7A~I to 9PM). The "healthy" group's recordings were 25 minutes long, and so this group's segments were "cut" at the beginning of each recording.

Each system performed its standard computation on the segments: the CHRONOS algorithm computed low frequency (LF) and high frequency (HF) power on the first five minutes of each segment; and the Nerve Express algorithm computed LF and HF power on the first 192 RR intervals of each segment.

D. Agreement of Power Spectral Measures of RR Variability Computed Using the Nerve Express Algorithms to Those Computed Using CHRONOS

The analyses reported here describe the extent of agreement between these two methods in computing LF and HF. Because the distributions of both LF and HF power are positively skewed, these measures were log-transformed for statistical analysis. These results are based on the natural log transformed values for each measure (the standard metric for each measure). Throughout this report, "LF_C" and "HF_C" refer to the values computed using the CHRONOS algorithm, while "LF_N" and "HF_N" refer to the values computed using the Nerve Express algorithm.
Descriptive statistics for each measure are provided in Table 1. Figures la and 1b are scatter diagrams of the Nerve Express values and the CHRONOS values for LF and HF with the corresponding least squares regression line. Table 2 provides the estimated Pearson correlation and slope (considering the Nerve Express measure as dependent variable) between the two methods for each measure.

Table I: Descriptive statistics

Measure	Mean	SD	95% CI for mean
HF_C	5.77	1.44	(5.45, 6.09)
LF_C	4.75	1.40	(4.53, 4.97)
HF_N	7.47	1.31	(7. 18, 7.76)
LF_N	6.45	1,63	(6.09, 6.81)

Table 2: Measures of association between methods

Measure	Correlation	95% CI	Slope	95% CI
LF	0.838	(0.715, 0.960)	0.760	(0.648, 0.871)
HF	0.788	(0.649, 0.926)	0.918	(0.756, 1.079)

Table 2 along with Figures la and Ib indicate a clear linear association between methods in computing both low and high frequency power. However, there is a clear systematic difference between the two methods. On average, low frequency power computed using the Nerve Express method is 1.7 log units higher (95% CI of 1.48-1.92) than that computed by CHRONOS. High frequency power is also an average of 1.7 units higher (95% CI of 1.53-1.88) when computed using the Nerve Express method. The higher magnitude of the Nerve Express results reflects the wider bands used for LF and HF: 0.033 - 0. 15 Hz for LF (compared with 0.04 - 0. 15 Hz for CHRONOS) and 0. 15 - 0.50 Hz for HF (compared with 0. 15 - 0.40 Hz for CHRONOS).

The Intraclass Correlation Coefficient (ICC), a formal index of agreement, indicated high agreement between the two methods. The ICC was 0.78 for HF and 0.83 for LF. Both indices were computed after subtracting 1.7 from each value obtained from the Nerve Express algorithm.

E. Conclusion

The results of our comparison of the Nerve Express algorithms with the CHRONOS algorithms indicate that the results obtained are similar and suggest that the Nerve Express algorithms should predict death in coronary heart disease and level of physical fitness.

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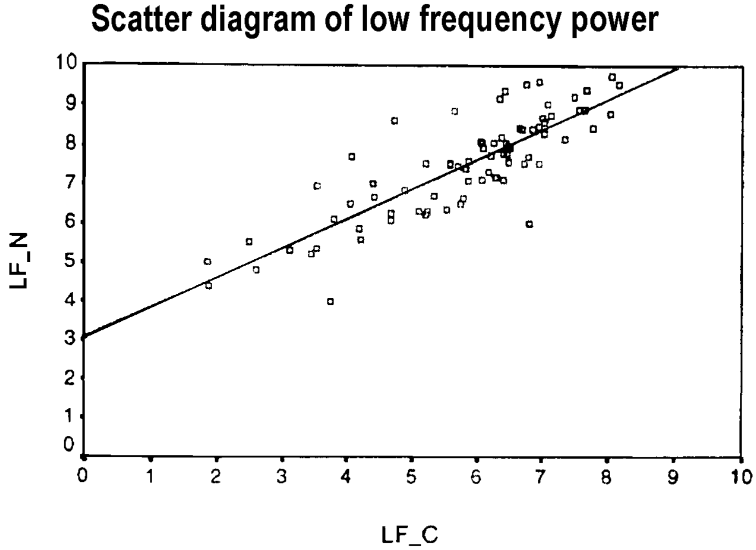
Figure 1a



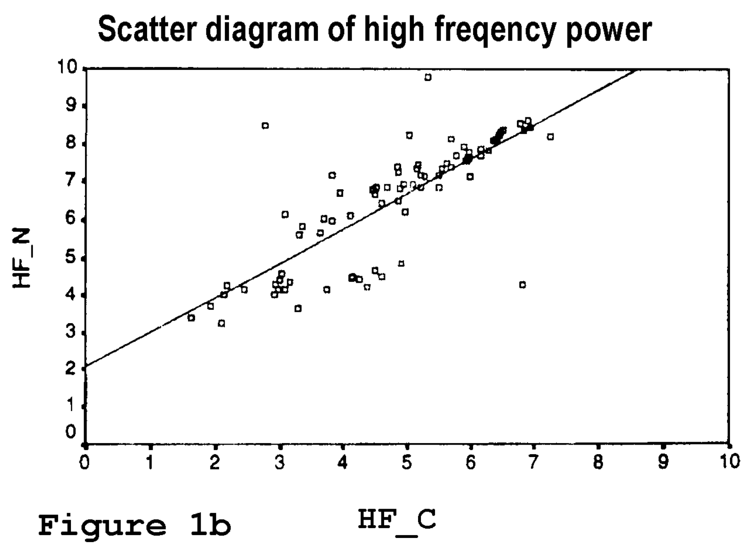


Figure 1b

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June 18, 1999

Alexander Riftine, Ph.D.
President
Heart Rhythm Instruments, Inc.
100 Overlook Terrace, Suite 316
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Dear Dr. Riftine:

Enclosed is the second report (report 2A) from the Research Holter Laboratory Columbia University, on our study comparing the Nerve Express Algorithm with the CHRONOS algorithm. The statistical analysis conducted by Dr. Michael Parides shows excellent agreement between the two algorithms.

Sincerely yours,

J. Thomas Bigger, Jr., M.D.

Professor of Medicine and
of Pharmacology

JTB :edr

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REPORT OF PHASE 2A: COMPARISON OF NERVE EXPRESS AND CHRONOS DATA ACQUISITION AND POWER SPECTRAL ALGORITHMS IN HEALTHY VOLUNTEERS

Date: June 18, 1999

A. Statement of Study Purpose

Heart Rhythm Instruments, Inc. has developed algorithms for power spectral analysis of RR intervals (the Nerve Express algorithms). Heart Rhythm Instruments, Inc. has packaged the Nerve Express algorithms in an instrument suitable for stand-alone office use. The overall goal of this project is to test the accuracy and reliability of the Nerve Express algorithms for power spectral analysis of RR intervals in the EGG. The evaluation of the Nerve Express algorithms is being done in two phases. Phase 1 was a comparison of the Nerve Express and CHRONOS algorithms on digital files in which the RR intervals had already been identified and labeled. The results of Phase 1 were submitted to Heart Rhythm Instruments, Inc. on June 5, 1998. Phase 1 compared the Nerve Express and the CHRONOS algorithms for power spectral analysis of RR interval on a set of 20 digital files. The purpose of Phase 2 was to compare the Nerve Express data acquisition functions and the algorithms for computing power spectral measures of RR interval variability with the "gold standard" CHRONOS algorithms to test the reliability of the Nerve Express algorithms for power spectral analysis of RR intervals. In this document we report a comparison done in 20 healthy subjects.

B. Background and Rationale

The background and rationale along with literature citations that establish CHRONOS as a "gold standard" were given in the report of Phase 1 results that was submitted to Heart Rhythm Instruments, Inc. on June 5, 1998.

C. Nerve Express System Validation Procedure

The word "system" is used to include data acquisition, QRS recognition, and calculation of power spectral measures of RR interval variability. The system validation procedure compared power spectral results computed by the Nerve Express algorithm (Heart Rhythm Instruments, Inc.) to reference values computed from the same healthy subjects by the CHRONOS algorithm (Columbia University). Electrocardiographic data for Phase 2A were obtained from 20 healthy adults recruited at Columbia University between December 23, 1998 and April 4, 1999. The healthy group's recordings were 12-18 (l4+l) minutes long, and included an initial eriod when the subjects rested in the supine position and a period when the subjects stood quietly.

Each system used its own data acquisition equipment. ECG data were acquired sequentially in alternating order. For half of the subjects, the data were first acquired with a Marquette 8500 Holter recorder (recorded on C120 audio cassettes) used by the Columbia University system and then with the AccuSync 7000-3 ECG gating system (AccuSync. Medical Research Corp., Milford, CT) used by the Heart Rhythm Instruments, Inc. For the remaining subjects, the order was reversed. Each system used its own algorithms to identify QRS complexes and select the RR intervals to use in power spectral analyses.

After the ECG was recorded for both systems and the RR intervals were selected for power spectral analysis, each system performed a power spectral computation on RR intervals in two segments, one segment when the subjects were supine and the other segment when they were standing quietly. The CHRONOS algorithm computed low frequency (LF) and high frequency (HF) power on a five-minute supine segment and a five-minute standing segment (immediately after standing up, one minute of the recording was excluded from analysis). The Nerve Express algorithm computed LF and HF power on a 192-RR-interval supine segment and a 192-RR-interval standing segment (immediately after standing up, 64 RR intervals were excluded from analysis). The units of LF and HF power are msec2

D. Agreement of Power Spectral Measures of RR Variability Computed Using the Nerve Express Algorithms to Those Computed Using CHRONOS

The analyses reported here describe the extent of agreement between these two systems in computing LF and HF. The Intraclass Correlation Coefficient (ICC) was used as the primary measure of agreement between the CHRONOS and the Nerve Express algorithms. Because the distributions of both LF and HF power are positively skewed, values for these measures were transformed into their natural logarithms for statistical analysis.
Our statistical results were calculated using the natural log- transformed values for each measure, e.g., Ln(LF) for the natural logarithm of LF power.

Table 1 gives the means, standard deviations, and 95% confidence intervals for Ln(LF) and Ln(HF) power computed by the CHRONOS algorithms and by the Nerve Express algorithms. Figure I shows the individual values for Ln(LF) and Ln(HF) power before and after standing up. Table 2 provides the Pearson correlation coefficients and the values for the slopes of the regression of the Nerve Express values on the CHRONOS values. Figure 2 plots Nerve Express values as a function of CHRONOS values for supine and standing Ln(LF) and Ln(HF) power; the least squares regression line and the line of identity are plotted as well.

Table 1: Means, standard deviations (SD), and 95% confidence intervals (CI) for supine and standing power spectral measures of RR interval variability obtained using CHRONOS and Nerve Express algorithms.

Measure	Posture	CHRONOS		Nerve Express	
		Mean±SD	95% CI	Mean±SD	95% CI
Ln(LF)	Supine	5.95±1.22	5.42,6.48	7.82±1.14	7.32,8.33
Ln(LF)	Standing	6.53±1.10	6.15,7.11	7.86±1.06	7.39,8.32
Ln(HF)	Supine	5.47±1.33	4.88,6.05	7.73±1.30	7.16,8.30
Ln(HF)	Standing	4.57±1.01	4.13,5.01	6.95±1.03	6.50,7.40

Table 2: Pearson correlation coefficients and the slope of the linear regression of Nerve Express values on CHRONOS values for supine and standing Ln(LF) and Ln(HF) power.

Measure	Posture	Correlation	95% CI	Slope	95% CI
Ln(LF)	Supine	0.66	0.31,1.01	0.62	0.30,0.95
	Standing	0.77	0.47,1.07	0.74	0.46,1.03
Ln(HF)	Supine	0.62	0.16,1.08	0.60	0.23,0.97
	Standing	0.72	0.40,1.04	0.74	0.41,1.07

Figure 2 shows the association between the two methods of computing Ln(LF) and Ln(HF) power. There is a linear relationship between the values of Ln(LF) and Ln(HF) power computed with the CHRONOS algorithm and the values computed with the Nerve Express algorithm, but there is also a clear systematic difference between the two methods. On average, power computed by the Nerve Express method is about 2 log units higher than that computed by CHRONOS. This systematic difference can be seen in Table 1. For example, Ln(LF) in the supine position computed by the Nerve Express is 1.87 log units higher than that computed by CHRONOS (7.82 vs. 5.95). The greater magnitude of the Nerve Express values reflect the wider bands used for LF and HF: 0.033 - 0. 15 Hz for LF (compared with 0.04 - 0. 15 Hz for CHRONOS) and 0. 15 - 0.50 Hz for HF (compared with 0. 15 - 0.40 Hz for CHRONOS).

The Intraclass Correlation Coefficient (ICC), a standard measure of interrater agreement, was used as the primary measure of agreement between the CHRONOS and the Nerve Express algorithms. The values of ICC in Table 3 indicate excellent agreement between the CHRONOS and the Nerve Express algorithms. Each ICC was computed after subtracting the difference in the means from each value obtained calculated with the Nerve Express algorithm.

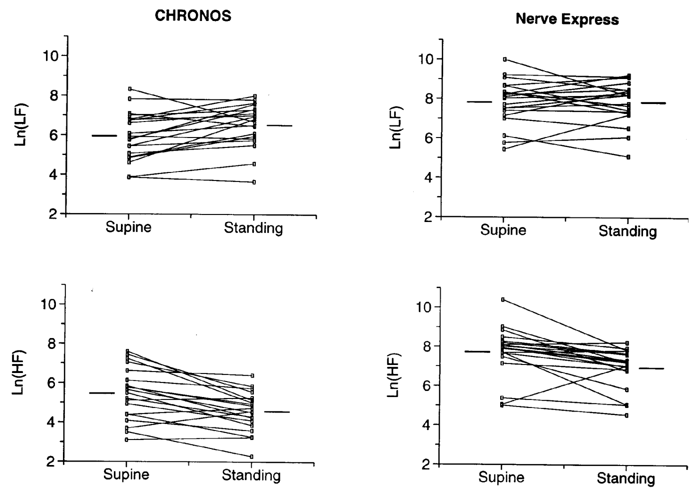
Table 3: Intraclass Correlation Coefficient (ICC) of Nerve Express values with CHROtSOS values for supine and standin Ln(LF) and Ln(HF) power.

Measure	Posture	ICC
Ln(LF)	Supine	0.67
	Standing	0.77
Ln(HF)	Supine	0.63
	Standing:	0.73

E. Conclusion

The results of our comparison of the Nerve Express algorithms with the CHRONOS algorithms indicate that the values obtained with the two algorithms show excellent agreement at rest and during the postural stress of standing.

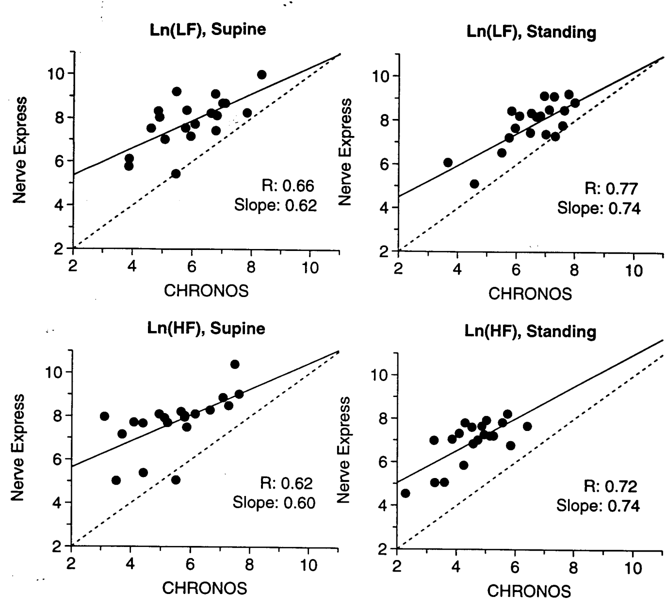
Figure 1



Units of LF and HF power are msec2.

The effect of postural change on LF and HF power. Individual values for Ln(LF) and Ln(HF) are shown before and after standing up. The horizontal lines represent mean values. CHRONOS results appear on the left, Nerve Express on the right.

Figure 2



Units of LF and HF power are msec:

Nerve Express values as a function of CHRONOS values for supine and standing Ln(LF) and Ln(HF) power. The dotted line is the line of identity and the solid line the least squares regression.

06/18/99

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January 12, 2001

Alexander Riftine, Ph.D
President & CEO
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Metuchen, NJ 08840

Dear Dr. Riftine:

Enclosed is the third and final report (report 213) from the Research Holter Laboratory Columbia University, on our study comparing the Nerve Express algorithm with the CHRONOS algorithm. The statistical analysis shows excellent agreement between the two algorithms.

Sincerely yours,

J. Thomas Bigger, Jr., M.D.
Professor of Medicine and of Pharmacology

JTB:edr

cc: R.C. Steininan

l.riftine03

REPORT OF PHASE 211: COMPARISON OF NERVE EXPRESS AND CHRONOS DATA ACQUISITION AND POWER SPECTRAL ALGORITHMS IN PATIENTS WITH HEART DISEASE

Date: January 10, 2001

A. Statement of Study Purpose

Heart Rhythm Instruments, Inc. has developed algorithms for power spectral analysis of RR intervals (the Nerve Express algorithms). Heart Rhythm Instruments, Inc. has packaged the Nerve Express algorithms in an instrument suitable for standalone office use. The overall goal of this project is to test the accuracy and reliability of the Nerve Express algorithms for power spectral analysis of RR intervals in the ECG. The evaluation of the Nerve Express algorithms is being done in two phases. Phase 1 was a comparison of the Nerve Express and CHRONOS algorithms on a set of 20 digital files in which the RR intervals had already been identified and labeled. The results of Phase I were submitted to Heart Rhythm Instruments, Inc. on June 5, 1998. The purpose of Phase 2 was to compare the Nerve Express data acquisition functions and the algorithms for computing power spectral measures of RR interval variability with the "gold standard" CHRONOS algorithms to test the reliability of the Nerve Express algorithms for power spectral analysis of RR intervals. The results of the comparison done in 20 healthy subjects, Phase 2A, were submitted to Heart Rhythm Instruments, Inc. on June 18, 1999. In this docuinent we report a comparison done in 20 patients with heart disease.

B. Background and Rationale

The background and rationale along with literature citations that establish CHRONOS as a "gold standard" were given in the report of Phase I results that was submitted to Heart Rhythm Instruments, Inc. on June 5, 1998.

C. Nerve Express System Validation Procedure

The word "system" is used to include data acquisition, QRS recognition, and calculation of power spectral measures of RR interval variability. The system validation procedure compared power spectral results computed by the Nerve Express algorithm (Heart Rhythm Instruments, Inc.) to reference values computed from the same patients by the CHRONOS algorithm (Columbia University). Electrocardiographic data for Phase 2B were obtained from 20 patients with heart disease recruited at New YorkPresbyterian Hospital between February 5, 1999 and January 20, 2000. The group's recordings were 1218 (14± 1) minutes long, and included an initial period when the patients rested in the supine position and a period when the patients stood quietly.

Each system used its own data acquisition equipment. ECG data were acquired sequentially in alternating order. For half of the patients, the data were first acquired with a Marquette 8500 Holter recorder (recorded on C120 audio cassettes) used by the Columbia University system and then with the AccuSync 70003 ECG gating system

(AccuSync Medical Research Corp., Milford, CT) used by the Heart Rhythm Instruments, Inc. For the remaining patients, the order was reversed. Each system used its own algorithms to identify QRS complexes and select the RR intervals to use in power spectral analyses.

After the ECG was recorded for both systems and the RR intervals were selected for power spectral analysis, each system performed a power spectral computation on RR intervals in two segments, one segment when the patients were supine and the other segment when they were standing quietly. The CHRONOS algorithm computed low frequency (LF) and high frequency (HF) power on a fiveminute supine segment and a fiveminute standing segment (immediately after standing up, one minute of the recording was excluded from analysis). The Nerve Express algorithm computed LF and HF power on a 192RRinterval supine segment and a 192RRinterval standing segment (immediately after standing up, 64 RR intervals were excluded from analysis). The units $_2$ of LF and HF power are msec $_2$.

D. Agreement of Power Spectral Measures of RR Variability Computed Using the Nerve Express Algorithms to Those Computed Using CHRONOS

The analyses reported here describe the extent of agreement between these two systems in co mputing LF and HF. The Intraclass Correlation Coefficient (ICC) was used as the primary measure of agreement between the CHRONOS and the Nerve Express algorithms. Because the distributions of both LF and HF power are positively skewed, values for these measures were transformed into their natural logarithms for statistical analysis. Our statistical results were'calculated using the natural logtransformed values for each measure, e.g., Ln(LF) for the natural logarithm of LF power.

Table I gives the means, standard deviations, and 95% confidence intervals for Ln(LF) and Ln(HF) power computed by the CHRONOS algorithms and by the Nerve Express algorithms. Figure I shows the individual values for Ln(LF) and Ln(HF) power before and after standing up. Table 2 provides the Pearson correlation coefficients and the values for the slopes of the regression of the Nerve Express values on the CHRONOS values. Figure 2 plots Nerve Express values as a function of CHRONOS values for supine and standing Ln(LF) and Ln(HF) power; the least squares regression line and the line of identity are plotted as well.

Table 1: Means, standard deviations (SID), and 95% confidence intervals (CI) for supine and standing power spectral measures of RR interval variability obtained using CHRONOS and Nerve Express algorithms.

	CHRONOS		**Nerve Express**		
Measure	Posture	**Mean±SD**	**95 % IN**	**Mean±SD**	95% CI
	Supine	4.82±1.64	4.08,5.55	6.82±1.66	6.07,7.56
Ln(LF)	Standing	4.51±1.56	3.81,5.21	6.99±1.51	6.31,7.67
	Supine	4.16±1.51	3.48,4.83	7.16±1.85	6.33,7.99
Ln(HF)	Standing	3.81±1.35	3.20,4.41	7.11±1.93	6.25,7.98

Table 2: Pearson correlation coefficients and the slope of the linear regression of Nerve Express values on CHRONOS values for supine and standing Ln(LF) and Ln(HF) power.

Measure	Posture	Correlation	95% CI	Slope	95% CI
Ln(LF)	Supine	0.88	0.63,1.10	0.88	0.66,1.11
	Standing	0.73	0.39,1.06	0.70	0.39,1.02
Ln(HF)	Supine	0.74	0.42,1.05	0.90	0.51,1.29
	Standing	0.75	0.45,1.07	1.07	0.62,1.52

Figure 2 shows the association between the two methods of computing Ln(LF) and Ln(HF) power. There is a linear relationship between the values of Ln(LF) and Ln(HF) power computed with the CHRONOS algorithm and the values computed with the Nerve Express algorithm, but there is also a clear systematic difference between the two methods. On average, power computed by the Nerve Express method is about 3 log units higher than that computed by CHRONOS. This systematic difference can be seen in Table 1. For example, Ln(HF) in the supine position computed by the Nerve Express is 3.00 log units higher than that computed by CHRONOS (7.16 vs. 4.16). The greater magnitude of the Nerve Express values reflect the wider bands used for LF and HF: 0.033 0. 15 Hz for LF (compared with 0.04 0.15 Hz for CHRONOS) and 0. 15 0.50 Hz for HF (compared with 0. 15 0.40 Hz for CHRONOS).

The Intraclass Correlation Coefficient (ICC), a standard measure of interrater agreement, was used as the primary measure of agreement between the CHRONOS and the Nerve Express algorithms. The values of ICC in Table 3 indicate excellent agreement between the CHRONOS and the Nerve Express algorithms. Each ICC was computed after subtracting the difference in the means from each value obtained calculated with the Nerve Express algorithm.

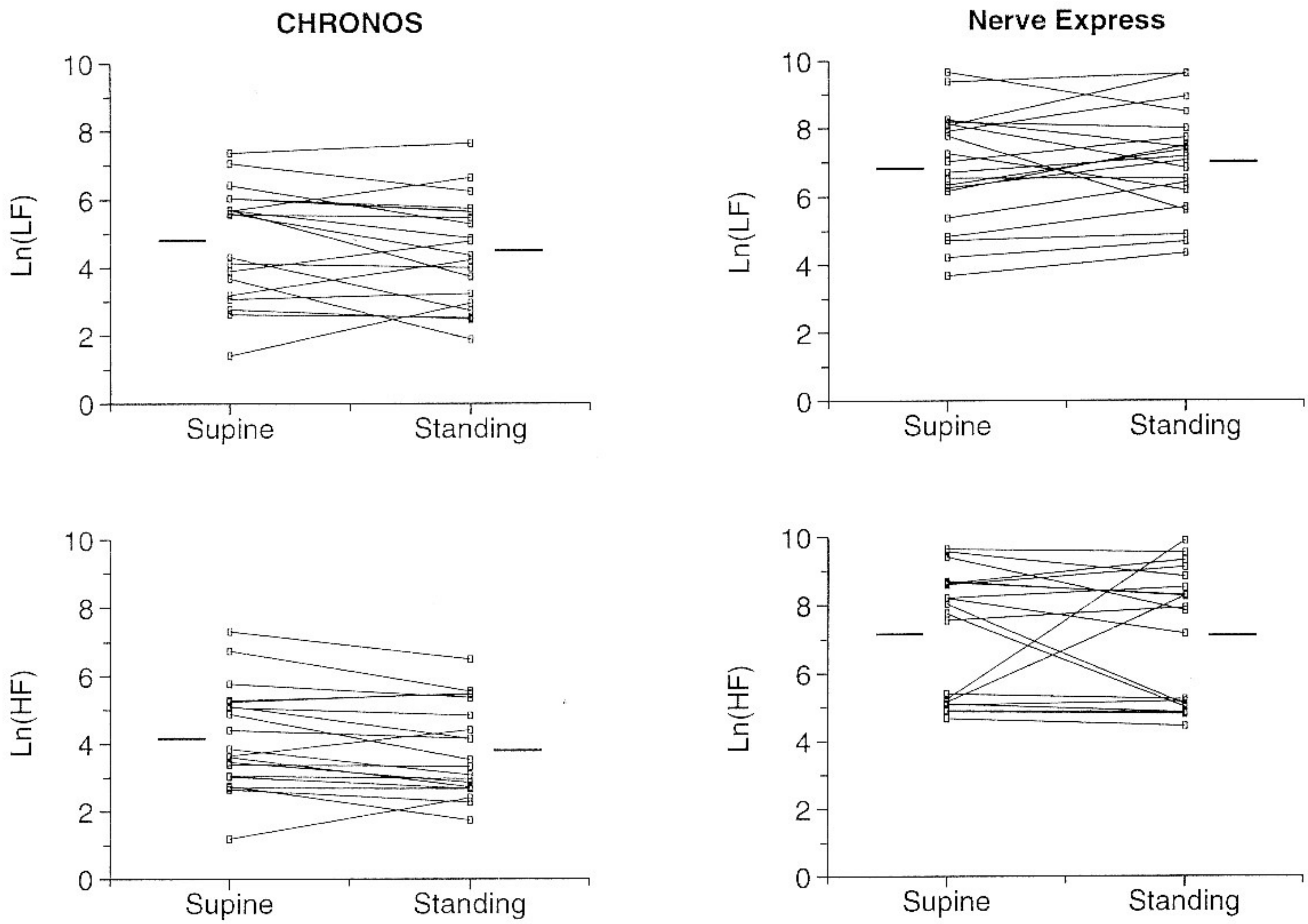
Table 3: Intraclass Correlation Coefficient (ICC) of Nerve Express values with CHRONOS values for supine and standing Ln(LF) and Ln(HF) power.

Measure	Posture	ICC
Ln(LF)	Supine	0.88
	Standing	0.73
Ln(HF)	Supine	0.73
	Standing	0.74

E. Conclusion

The results of our comparison of the Nerve Express algorithms with the CHRONOS algorithms indicate that the values obtained with the two algorithms show excellent agreement at rest and during the postural stress of standing.

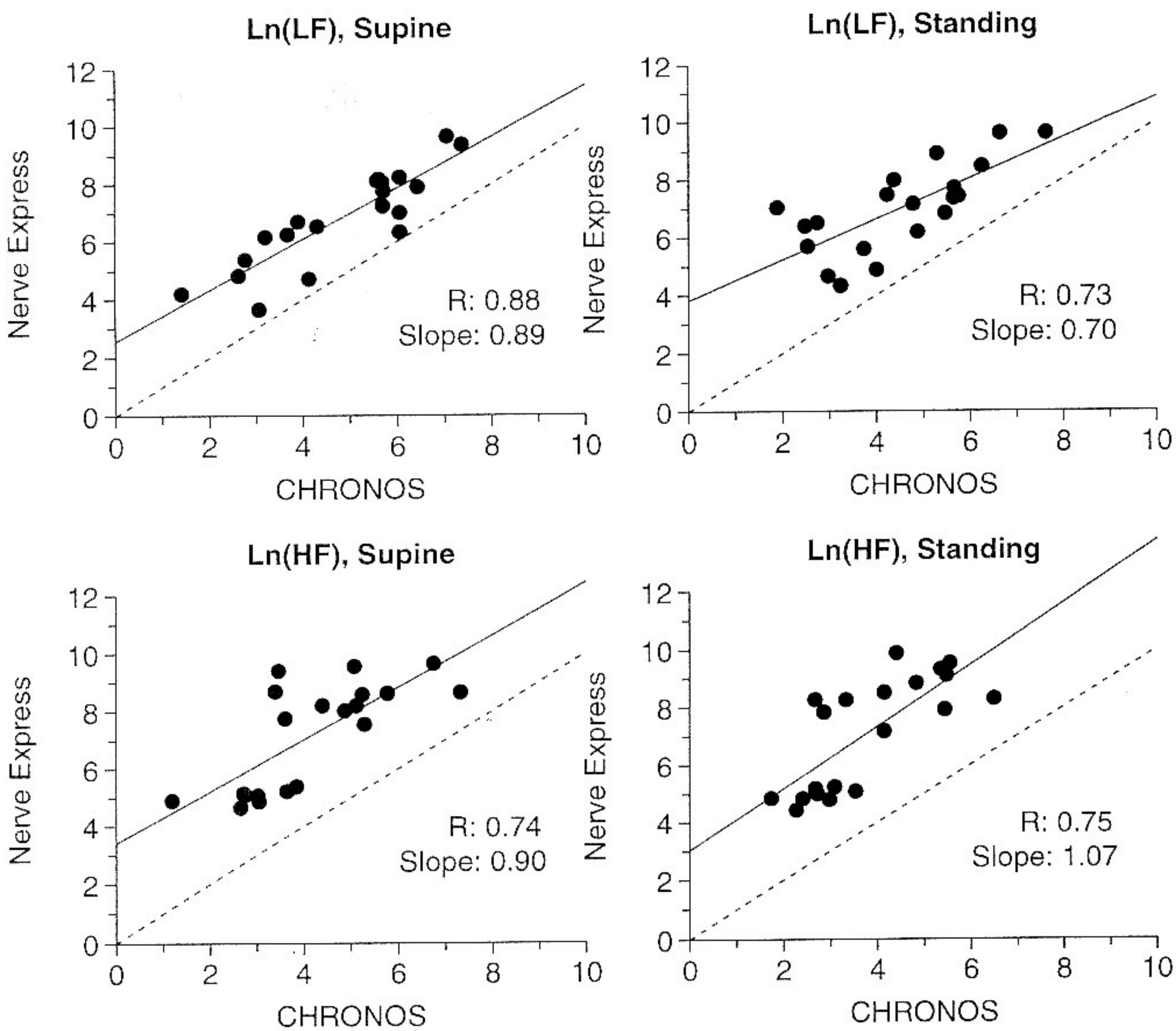
Figure 1



Units of LF and HF power are msec2.

The effect of postural change on LF and HF power. Individual values for Ln(LF) and Ln(HF) are shown before and after standing up. The horizontal lines represent mean values. CHRONOS results appear on the left, Nerve Express on the right.

Figure 2



Units of LF and HF power are msec2.

Units of LF and HF power are msec2.
Nerve Express values as a function of CHRONOS values for supine and standing Ln(LF) and Ln(HF) power. The dotted line is the line of identity and the solid line the least squares regression