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**Spectral Domain Analysis Suggests Withdrawal of Sympathetic Stimulus in Patients with Orthostasis**

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**Background:** Sympathetic withdrawal (SW) defines the continuum of orthostasis, and blood pressure (BP) and heart rate (HR) changes differentiate its forms: Orthostatic Hypotension (OH-), Orthostatic Intolerance (OI), Orthostatic Hypertension (OH+), and Postural Orthostatic Tachycardia Syndrome (POTS). Our objective was to determine if non-invasive autonomic monitoring can reliably detect clinical and pre-clinical Orthostasis. **Methods:** Autonomic profiling of 210 consecutive Orthostatic patients recruited from ambulatory clinics was performed using the ANX-3.0 (Ansar, Inc., Philadelphia, PA). The cohort (age=58.9±11.6; 30 Diabetics; 132 Females) included 28 controls with known diagnoses. Autonomic profiling was based on patient responses to quick change to quiet standing. Pearson Correlation was performed on the data using SPSS v 14.0. **Results:** Patients with SW but not meeting the clinical definitions of OH- and OH+ were labeled pre-clinical (pc). PcOH- was defined as SW with less than a 20 mmHg systolic and 10 mmHg diastolic drop in BP. Pc OH+ was defined as SW with an increase in systolic BP of between 11 and 30 mmHg. The majority of the experimental group had either OI or pcOH- which correlates with the control group. The two groups are significantly correlated (r=0.926, p=0.008). **Conclusions:** SW based on non-invasive ANS function testing can be a simple means of discriminating between orthostasis and its associated physiologic syndromes.

Table 1: Orthostasis Continuum According to BP and HR Changes Upon Standing.

	Totals	OH-	pcOH-	OH+	pcOH+	OI	POTS
Experiment	182	10 (5.5%)	61 (33.5%)	5 (2.7%)	10 (5.5%)	85 (46.7%)	11 (6.0%)
Control	28	2 (7.1%)	6 (21.4%)	3 (10.7%)	1 (3.6%)	15 (53.6%)	1 (3.6%)
Totals	210	12	67	8	11	100	12