P03.09. Modulation of Autonomic Nervous System Assessed Through Heart Rate Variability by a Mindfulness-based Stress Reduction Program: Study Protocol

Focus Areas: Integrative Approaches to Care, Supporting Behavioral Change, Alleviating Pain

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Background: Mindfulness-based stress reduction (MBSR) is a well-delineated 8-week mindfulness meditation program and hence lends itself well to be applied clinically and studied systematically.

Heart rate variability (HRV) is the beat-to-beat variation in the heart rate and is a unique way to study sympatho-vagal balance and autonomic control of cardiopulmonary dynamics.

Methods: Twenty healthy volunteers were recruited from among participants of the MBSR program offered at the University of Minnesota. Two visits are planned, before and after completion of the MBSR program.

After a brief period to help subjects acclimatize, 3 phases of data were recorded, each phase lasting for 5 minutes.

> Phase 1. *Resting:* Served as baseline value.
> Phase 2. *Controlled Respiration:* Involved audio cues to control the respiratory rate at a fixed interval of 6/minute.
> Phase 3. *Meditation:* Involved self-guided sitting meditation.
> Echocardiogram, respiration, and skin temperature were recorded continuously throughout each phase.
> Each subject will serve as his/her own control.

Endpoints: Change in the standard deviation of normal-normal RR intervals (SDNN), measure of HRV total power, during a state of meditation (phase 3) at the completion of the MBSR program. Change in SDNN during a resting, non-meditative state (phase 1) at the completion of the MBSR program. Change in SDNN between controlled respiration (phase 2) and meditation (phase 3) after completion of the MBSR program. Change in Perceived Stress Scale score.

Conclusion: Volunteers will return for their final visit after completion of the MBSR course in June 2013. With the knowledge gained from this pilot study, we hope to study the effects of the MBSR program in patients with established cardiovascular disease conditions in which sympatho-vagal imbalance is known to play some role in causation, namely myocardial infarction, heart failure, and hypertension.

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