

## POSTER 65

### **COUPLING OF SPONTANEOUS CHANGES IN MUSCLE SYMPATHETIC NERVE ACTIVITY TO BLOOD PRESSURE IN HUMANS: POTENTIAL INFLUENCE OF AGE**

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Previous studies indicate a 5.5 second latency between a burst of muscle sympathetic nerve activity (MSNA) and the resultant peak blood pressure response, which averages up to 3 mmHg. Aging may attenuate  $\alpha$ -adrenergic sensitivity, impair baroreflex function, and hence affect the ability to sympathetically modulate blood pressure. Yet a thorough examination of these relationships in older adults has not been performed. Purpose: To compare the relationship between spontaneous changes in MSNA to changes in blood pressure in young and older men. Methods: In 5 young and 5 older men, arterial blood pressure (finger plethysmography), heart rate (EKG) and MSNA (microneurography) were continuously measured at rest. Relationships between MSNA and diastolic blood pressure (DBP) were characterized for 15 cardiac cycles following each individual burst of MSNA. All bursts within a 10-minute period were evaluated and averaged for each individual subject to describe the latency and magnitude of DBP responses. Results: Older men had significantly higher resting MSNA burst frequency and burst incidence ( $35 \pm 4$  young vs.  $58 \pm 5$  burst/100 heart beats older,  $P < 0.05$ ). Following a MSNA burst, the latency to the peak increase in DBP was approximately 7s in both groups ( $P > 0.05$ ). Similarly the magnitude of the increase in DBP rose to a similar extent ( $3.5 \pm 0.3$  young vs.  $3.5 \pm 0.4$  mmHg older,  $P > 0.05$ ) in both young and older men. Conclusion: These results suggest that although resting MSNA is significantly elevated, the latency and magnitude to the peak changes in DBP following a sympathetic burst is not altered with age.

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