**DATA SUPPLEMENT**

The influence of barosensory vessel mechanics on the sympathetic baroreflex: insights into blood pressure homeostasis

Running title: Barosensory vessel mechanics and the baroreflex

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**METHODS**

The total cardiac cycle length was calculated using the R-R interval from the corresponding ECG, systolic period was calculated as the start of the Q wave to the end of the T wave and diastolic period calculated as the end of the T wave to the start of the Q wave on the ECG.

**RESULTS**

Cardiac cycle length, diastolic period and systolic period were longer in middle-aged men, however only the longer systolic period was significantly different to young men (*P* < 0.001, see Supplementary Table S1)

Diastolic diameters of both the aorta and carotid arteries were significantly greater in middle-aged men(*P* < 0.012), whereas systolic diameter similar between young and middle-aged men (*P* > 0.12, see Table S2). Systolic wall thickness of both the aortic and carotid arteries was greater in middle-aged men compared to young men, but diastolic wall thickness was only greater in middle-age men in the aortic artery (*P* < 0.011, see Supplementary Table S2).

Supplementary Table S1 – Cardiac cycle, systolic period and diastolic period data

|  |  |  |
| --- | --- | --- |
|  | **Young men**  **(n = 27)** | **Middle-aged men**  **(n = 22)** |
| Cardiac cycle length (ms) | 1180 ± 241 | 1263 ± 278 |
| Systolic period (ms) | 325 ± 25 | 356 ± 22 \* |
| Diastolic period (ms) | 868 ± 231 | 957 ± 257 |

Data are presented as mean ± SD. \* significantly different between young and middle-aged men, *P* < 0.05

Supplementary Table S2 – Resting barosensory vessel diameters and wall thicknesses

|  |  |  |
| --- | --- | --- |
|  | **Young men**  **(n = 27)** | **Middle-aged men**  **(n = 22)** |
| *Aortic diameter and wall thickness* | | |
| Aortic systolic diameter (mm) | 26.7 ± 3.9 | 28.8 ± 3.6 |
| Aortic diastolic diameter (mm) | 22.5 ± 3.2 | 26.1 ± 3.6 \* |
| Aortic systolic wall thickness (mm) | 1.9 ± 0.4 | 2.3 ± 0.5 |
| Aortic diastolic wall thickness (mm) | 2.4 ± 0.6 | 3.1 ± 0.8 \* |
| *Carotid artery diameter and wall thickness* | | |
| Carotid systolic diameter (mm) | 7.2 ± 0.6 | 7.2 ± 0.7 |
| Carotid diastolic diameter (mm) | 6.3 ± 0.6 | 6.7 ± 0.7 \* |
| Carotid systolic wall thickness (mm) | 0.8 ± 0.2 | 1.0 ± 0.3 \* |
| Carotid diastolic wall thickness (mm) | 1.0 ± 0.3 | 1.2 ± 0.3 |

Data are presented as mean ± SD. \* significantly different between young and middle-aged men, *P* < 0.05