P8: THE EFFECT OF CAFFEINE ON MENTAL STRESS RELATED CARDIOVASCULAR RESPONSE

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calcification. Development of aortic calcifications shares many similarities with atherogenesis, we thus hypothesize that people with short TL may have higher risk to develop aortic valve stenosis.

Methods: Aortic valves were obtained from 11 patients undergoing valve replacement surgery. Each valve cusp was macroscopically dissected into healthy, intermediate and calcified regions. DNA was extracted by phenol/ chloroform method and TL measured by Southern blots of the terminal restriction fragments.

Results: TL from healthy and intermediate valve regions were similar and then merged in a non-calcified group. In all subjects, TL of calcified regions were shorter than TL in non-calcified regions. The gap between TL of non-calcified and calcified regions was 0.53kb (p < 0.007).

Conclusion: Calcified aortic valve regions have shorter telomere length than non-calcified. Directionality of the relationship between telomere dynamics and aortic valve stenosis will be explored in vitro.

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THE EFFECT OF CAFFEINE ON MENTAL STRESS RELATED CARDIOVASCULAR RESPONSE
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Background: Caffeine, the most widely used pharmacologically active substance causes mental stimulation and a slight raising of blood pressure. The aim of our work was to evaluate the effect of caffeine on the cardiovascular system during rest and during mental stress.

Methods: RR interval duration, arterial blood pressure and Laser-Doppler (LD) flux were monitored in 40 healthy volunteers (aged 21.98 ± 0.9 years) before and after ingestion of 200 mg of caffeine. The measurements were performed during rest (360s), during mental stress (90s) and during relaxation after mental stress (510s). The measurements were performed twice: under the effect of caffeine and under the effect of placebo. The study was approved by the National Medical Ethics Committee; written informed consent was obtained from each subject.

Results: During resting condition RR interval (ms) increased (910.49 ± 130.5 before and 958.96 ± 130.66 after) (p < 0.05), systolic blood pressure (mm Hg) increased (119.35 ± 14.3 before and 127.54 ± 15.9 after) (p < 0.05), diastolic blood pressure (mm Hg) increased (68.78 ± 11.2 and 76.20 ± 11.6) (p < 0.05), LD flux decreased (150.05 ± 96.4 and 115.15 ± 86.7) (p < 0.05) and temperature decreased (30.92 ± 3.5 and 29.71 ± 3.5) (p < 0.05) after ingestion of caffeine. During mental stress systolic and diastolic blood pressure increased significantly less, RR interval was nearly the same and LD flux after mental stress was 5.3kb (p < 0.007).

Conclusion: Caffeine activates the mental stress system and has favourable effect on mental stress while caffeine is ingested.