**INITIAL STAGES OF OBESITY ARE ASSOCIATED WITH INCREASED CARDIOVASCULAR ACTIVATION UNDER STRESS**

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Stress and obesity are well known risk factors for cardiovascular diseases. The recognition of early markers of cardiovascular risk during the development of obesity is essential. The hypothesis tested was that under stress conditions subjects at initial stages of obesity exhibit different cardiovascular and neuroendocrine activation compared to those with normal body weight. Healthy volunteers above the upper (BMI – 26.5-35, n=17) and at the lower (BMI less than 21, n=17) limit of normal range of body weight were included. Subjects with middle-range body weight (BMI 21-26) were excluded. The subjects were exposed to a stress procedure consisting of mental (Stroop test) and physical (cold pressor test) component. Systolic and diastolic blood pressure was monitored before, during and after the stress exposure. Saliva was collected for the measurements of stress hormone concentrations and activity of alpha-amylase. Activity of this enzyme is reflecting, at least partly, the activity of the sympathetic nervous system. The same parameters were analysed in saliva collected by the subjects another day under non-stress conditions to monitor the daily rhythm. Trait and state anxiety were evaluated by Spielberger State-Trait Anxiety Inventory. Stress exposure resulted in an increase in alpha-amylase activity in both groups. Subjects with higher BMI exhibited increased activity of alpha-amylase as well as higher systolic and diastolic blood pressure compared to those with lower BMI. Volunteers with overweight were less anxious than slim individuals. Under non-stress conditions, subjects with higher BMI had higher alpha-amylase activity and lower cortisol concentrations throughout the day. Both groups showed higher state anxiety before the stress exposure than at its end. In conclusion, evaluation of stress response in subjects at initial stages of obesity revealed changes in neuroendocrine parameters suggesting a mild dysfunction of autonomic nervous system activity.

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