

Abstract

An autonomic dysfunction caused by spinal cord injury may have a significant impact on quality of life, especially in cases of lesions occurring above the sixth spinal segment. In these cases also cardiovascular system control is damaged in a different extent, which is subsequently presented by e.g. persisting bradycardia, heart frequency inadequate reaction to strain and stress or by huge variations of blood pressure values, which the situation complicate even more. The fact that cardiovascular diseases take now the frontmost place in causes of mortality of people with spinal cord injury is another evidence how important this topic is.

The main aim of my thesis was to describe impacts of autonomic injury on cardiovascular functions and to try to objectify them using heart rate and blood pressure variability. Twenty-one patients of Motol University Hospitalv Spinal Unit with spinal cord lesion above Th₆ segment and ten healthy people as a control group participated in the study. We created suitable conditions for highlighting disrupted cardiovascular functions of urgent spinal patients by modification of the standardized Head Up Tilt Test (HUTT). The heart rate and blood pressure values were continuously monitored by Finapres device before, during and also after verticalization on a tilt table. During HUTT the results showed statistically significant changes in both heart rate and blood pressure reactions. Using inter-beat interval heart rate variability was described and by mean of arterial pressure also blood pressure variability was covered, again with statistically significant differences in comparison with the control group. In three proband case studies there were presented possibilities of more detailed evaluation of autonomic injury range using spectral analysis of heart rate variability.