



Quality of sleep and salivary cortisol

Introduction

Contradictory associations between sleep disturbances and changes in cortisol levels or unfavourable metabolic conditions like obesity and diabetes mellitus have been observed.

The aim of the present study was to examine salivary cortisol in persons with reduced sleep quality and to evaluate the relationship between sleep quality and metabolic parameters.

Results

- 55 (35.7%) persons → decreased quality of sleep
- 43.5% of all women reported sleep disturbances in contrast to 26.0% of men ($p=0.025$)
- Mean of salivary cortisol 6.3 ng/ml (± 3.7)
- Salivary cortisol levels of male poor sleepers were significantly lower in comparison to the levels of male good sleepers ($p=0.007$)
- No significant results for BMI and HOMA-IR

Methods

- 154 healthy persons (85 females; 27–76 years old; mean = 56.3, SD = 10.4 years)
- Collection of morning salivary cortisol
- Quantitative analysis with ELISA
- Pittsburgh Sleep Quality Index (PSQI)
- Body Mass Index (BMI) and the Insulin resistance index (HOMA-IR)

Discussion

- Sleep disturbances are very common healthy people, especially in women
- Particularly in men, reduced sleep quality (e.g., prolonged sleep latency) is associated with low morning levels of salivary cortisol, representing malfunction of the circadian rhythm and the hypothalamic–pituitary–adrenal axis
- Psychobiological significance of salivary cortisol → further studies on different cortisol responses in the development of psychiatric diseases are indicated
- Missing correlations between sleep problems and metabolic symptoms are contradictory to the literature and need to be discussed