LEPTIN MEASUREMENT IN URINE AS A METHOD OF MONITORING ITS SECRETION IN PATIENTS WITH OBSTRUCTIVE SLEEP APNEA SYNDROME

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Leptin is believed to play significant role in the pathogenesis of obstructive sleep apnea syndrome (OSAS) as well as progression of OSAS-related obesity. It is also known that other factors such as gender and diurnal variations in serum strongly affect the measurement results making repeated blood sampling necessary for leptin precise monitoring. Since renal metabolism and urine secretion are main elimination mechanism for leptin, we aimed this study to evaluate urine relevance for leptin secretion monitoring. Serum and urine (collected during the day and overnight) sampled from 169 OSAS patients and 41 controls were assayed by immunoenzymatic method specific for human leptin. Only 5 (17%) controls and 10 (5,8%) OSAS patients had undetectable urine leptin. We observed significant relationship between serum and urinary leptin both in day-time ($r=0.656$; $P<0.001$) and night-time ($r=0.518$; $P<0.001$) samples as well as between day-and night-time urine leptin ($r=0.811$; $P<0.001$). The significance of the values did not alter when urinary leptin levels were expressed as the ratio to urinary creatinine. Gender-related differences in leptin concentrations were present both in serum ($P<0.001$) and overnight urine ($P<0.01$) from the OSAS group. However, mean night-time urine leptin was lower in the OSAS patients ($P<0.05$) and their subgroups stratified according to disease severity ($P<0.01$), while the serum leptin levels were comparable in both groups. In conclusion, assaying leptin in urine by immunoenzymatic method is possible, easy and reliable, and might be a useful non-invasive alternative for its serum measurements. However, the night-time urine leptin levels better reflect differences in its turn-over due to gender and OSAS severity.