

THE INFLUENCE OF 75G GLUCOSE LOAD ON PARAOXONASE-1 ACTIVITY IN SERUM OF OBSTRUCTIVE SLEEP APNEA PATIENTS DUE TO THE ENZYME GENE L55M POLYMORPHISM.

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Antioxidant function of paraoxonase-1 (PON) is highly valuable in a context of cardiovascular disease (CVD), thus any factors affecting its function in obstructive sleep apnea (OSA) patients should be recognized.

The aim of the study was to determine PON activity during oral glucose tolerance test (OGTT) in OSA-positive and OSA-negative subjects, according to paraoxonase-1 gene L55M polymorphism.

Methods: OSA-suspected Caucasians aged 25-75, with no acute or severe chronic disorder were qualified for OGTT and underwent full-night polysomnography, and apnea/hypopnea index was used to diagnose OSA-negative (n=52) and OSA-positive (n=58) non-diabetic subjects. Serum PON activity was measured at 0' and 120' of OGTT, spectrophotometrically with the use of paraoxon as a substrate, due the method described by Aviram M. et al. (1998). $PON\text{-Ratio} = \frac{PON\text{-}120'}{PON\text{-}0'}$ was calculated. PON L55M polymorphism was established by genomic DNA extraction from leucocytes and amplification using standard PCR with specific primers. The presence of LL, LM and MM genotypes were detected by Restriction Fragments Length Polymorphism method and confirmed by automatic sequencing (Campo et al., 2004).

Results: OSA-positive patients presented lower fasting PON and higher PON-Ratio as compared with OSA-negative, in all study population and LL and LM genotype groups separately. Different metabolic factors affected fasting PON and PON-Ratio according to LL (i.e. negative correlation $PON\text{-Ratio} \& Glucose\text{-}120'$) and LM genotypes determined.

Conclusion: The ability to mobilize decreased fasting activity of PON after 75g glucose stimulus could characterize non-diabetic OSA-positive patients. However increasing 2-h glycemia may limit the degree of PON-Ratio increase in LL genotype patients.