

## PARAOXONASE 1 IN OBSTRUCTIVE SLEEP APNEA - ENZYME ACTIVITY AND GENE Q192R POLYMORPHISM

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Relationships of obstructive sleep apnea (OSA) and cardiovascular disease (CVD) are still intensively discussed.

**The aim of the study** was to determine paraoxonase activity (PON1-act) and PON1 gene Q192R polymorphism, according to OSA diagnosis.

**Methods:** OSA-suspected Caucasians aged 27-75 with no acute or severe chronic disorder underwent full-night polysomnography. Apnea/hypopnea index was used to diagnose: OSA-negative (n=50) and OSA-positive (n=70) groups. Traditional risk factors of CVD were measured. Genomic DNA was analyze using standard PCR with specific primers, Restriction Fragments Length Polymorphism method and automatic sequencing (Campo et al., 2004) to determine PON1-Q192R-polymorphism: QQ, QR, RR genotypes. PON1-act was measured in serum spectrophotometrically (method of Aviram M. et al.,1998).

**Results:** Different frequency of PON1 Q192R polymorphism was established in OSA-negative and OSA-positive subjects ( $p<0.05$ ), and PON1-act didn't differ among genotypes. PON1-act was lower in OSA-positive *versus* OSA-negative ( $p<0.001$ ) groups in the study population and QQ, QR, RR subgroups. QQ genotype was found the most significant differences of PON1-act between OSA-neg and OSA-pos subjects and the correlations between PON1-act and selected CVD risk factors.

**Conclusion:** QQ genotype might be the most sensitive for OSA-related lowering of PON1 activity. Regardless of PON1 genotype (QQ, QR, RR), OSA pathology decreases PON1 activity.