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OPRM1 GENE POLYMORPHISMS IN OPIOID ADDICTION

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Introduction: Opioid addiction is a serious health/social problem, associated with high morbidity and mortality.Several gene polymorphisms on the mu-opioid receptor gene(OPRM1), which plays an important role in reward system, have been related to opioid dependence (A118G, C17T, C2044A). A118G is the most studied and probably the most promising biomarker of better response in these patients, despite discrepancies has been manifested even in studies conducted on the same ethnicity.
Objectives and aims: Description of A118G, C17T and C2044A allele frequencies in an opioid-dependent population. Evaluation of the association of A118G gene polymorphism with opioid dependence.
Methods: Case-control Study.
Case group: 16 patients with opioid addiction, included in a Heroin Prescription Program in Andalusia, based on the protocolized individual prescription of diacetylmorphine.
Control group: 32 non opioid-dependent subjects.Genotyping of A118G, C17T and C2044A was performed by Polymerase Chain Reaction and Restriction Fragment Length Polymorphism.
Results: Case group: 12 patients were AA homozygous (12/16;75%) and 4 patients were heterozygous AG (4/12;25%) for A118G. All patients were homozygous CC for C17T and C2044A (16/16;100%). The distribution of the genotype frequencies of OPRM1 gene polymorphisms in the case series were not statistically different from those reported for European populations in HapMap for A118G (p=0.6418) and the GENO PANEL for C17T.
Control group:19 patients were AA homozygous(19/32; 59.4%) and 13 patients were heterozygous AG (13/32;40.6%) for A118G. This polymorphism was not associated to opioid addiction (p=0.3503).
Conclusions: Distribution of genotype frequencies in opioid dependants corresponded to specific frequencies from European population for A118G and C17T polymorphisms. OPRM1 gene polymorphisms were not associated to opioid addiction in this population.