

AAN 66th ANNUAL MEETING ABSTRACT

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Press Release Title: Low Tolerance for Pain? The Reason May Be In Your Genes

Abstract Title: #P4.349 Perception of Analgesia in Narcotic Users with Chronic Pain: A Multi-Center Cross-Sectional Study Comparing Genotype to Pain VAS (P.A.I.N. Study)

Objective: To evaluate whether genotype can help objectively stratify patient perception of pain among chronic pain patients taking narcotics.

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Background: Various studies have explored modalities for objectively evaluating pain perception, including functional MRI and genotype. In this study, researchers evaluated 2,721 patients from 48 clinical sites and conducted a cross-sectional analysis of genotype with Pain VAS.

Design/Methods: Subjects diagnosed with chronic pain and currently taking prescription opioid pain medications were genotyped using a RealTime PCR TaqMan assay from Proove Medical Laboratories (Irvine, CA). The following single nucleotide polymorphisms (SNPs) were evaluated: COMT (Rs4680), DRD2 (Rs1800497), DRD1 (Rs4532), and OPRK1 (Rs1051660). All 2,721 patients completed a Pain VAS rating their perception of pain on a scale from 0 to 10. Subjects with no pain (Pain VAS) were excluded from the study. Low pain perception was defined as a score of 1, 2 or 3 (n=249, 9.2%). Moderate pain perception was defined as a score of 4, 5 or 6 (n=1259, 46.2%). High pain perception was defined as a score of 7, 8, 9 or 10 (n=1,213, 44.6%). A multinomial logistic regression analysis was performed using SPSS.

Results: The DRD1 variant was found to be more prevalent in the low pain perception population compared to high pain perception population (p<0.043, OR 1.334 PPV 84.44 %). Among subjects with a moderate pain perception, the COMT and OPRK variants were more prevalent compared to those with high pain perception (COMT: p<0.007, OR 1.25 PPV: 52.41%, OPRK: p<0.032, OR 1.19, PPV 51.09%). Among subjects with a high pain perception, the DRD2 variant was more prevalent compared to subjects with moderate pain perception (p<0.041, OR 1.25, PPV 52.61%).

Conclusions: This retrospective analysis provides a potential genotypic analysis to stratify pain perception, and a more objective method to define subjective Pain VAS perceptions.