The COMT Polymorphism and Hostility in Schizophrenia

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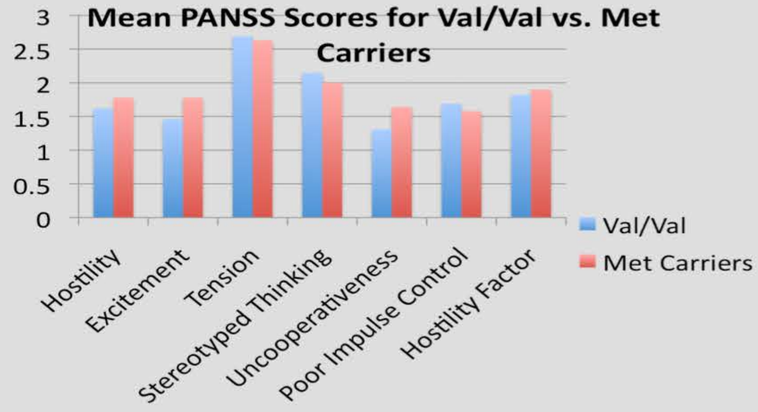
INTRODUCTION

•The catechol-O-methyltransferase (COMT) gene has two alleles involving a Met → Val substitution at codon 158 of the COMT gene.
• The gene codes for an eponymous enzyme that is responsible for breaking down various catecholamines, such as dopamine, epinephrine, and norepinephrine.
•Homozygosity for the Met allele yields a 3- to 4-fold reduction in COMT activity relative to Val homozygotes, with heterozygotes demonstrating intermediate activity (Strous 1996).
•Studies have shown a correlation between schizophrenics carrying the met allele of the COMT gene and violent behavior.
•This study attempts to elaborate upon the correlation between COMT genotype and hostility in 51 schizophrenia patients from the IOL mental health clinic in Hartford, CT.

METHODS

•Study relied on two separate tests: the Positive and Negative Syndrome Scale (PANSS) and the genotypic determination.
•The PANSS is an interview that is commonly used to assess the severity of common signs and symptoms of schizophrenia in an individual. The interview is designed to ask questions that will elicit responses from the patient that will indicate the severity of several different aspects of the disease.
•The Bell hostility factor is obtained from six items on the PANSS assessment. Those items are hostility, excitement, tension, stereotyped thinking, uncooperativeness, and poor impulse control. The score from these items is then averaged to determine a score from 1-7.
•To determine the genotype of an individual, the individual merely has to spit in a cup. The saliva of the patient can then be sent to the lab for analysis.

RESULTS



•13 val/val and 36 met carrier genotypes identified.
•Person Correlation between COMT and hostility factor was calculated to be 0.066.
•This correlation is statistically insignificant, indicating that there is no correlation between the Met allele in COMT and hostility in this patient group.

Descriptive Statistics of Group Studied

	Number	Minimum	Maximum	Mean	Standard Deviation
Age	51	19	59	35.75	11.93
Sex	51	1	2	1.33	.476
Education	51	10	18	13.39	1.845
Duration of Illness	50	1	40	11.82	10.452
Number of Hospitalizations	47	0	13	4.19	2.708

DISCUSSION

•No statistically significant correlation between hostility and the Met allele was observed.
•On some of the items of the PANNS involved in the hostility factor, Val homozygotes scored higher on average than Met carriers.
•Previous studies that found correlations involved incarcerated inpatients or patients known to have a history of homocide or violence (Kotler 1999).
•This study involved relatively high functioning outpatients, with no reported history of violent behavior. The sample used did not have a wide enough range of hostility for a significant correlation to be observed. Hostile schizophrenics are more likely to be treated in inpatient facilities, thus they were underrepresented in this study.
•Future studies should ensure that the sample draws individuals from as wide of a background as possible. A study involving inpatients from the CVH mental hospital in Middletown, CT could provide the demographic missing from this partisan data set.

LITERATURE CITED

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