Mary Hauser, J Addict Res Ther 2014, 5:3
http://dx.doi.org/10.4172/2155-6105.S1.014

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference and Exhibition on
Addiction Research & Therapy
August 04-06, 2014 Hilton-Chicago/Northbrook, Chicago, USA

Mary Hauser
Dominion Diagnostics, LLC., USA

Genetic addiction risk score (GARSrx™), comprehensive analysis of reported drugs (CARD™) dopamine agonist therapy (kb220z™): Embracing genetic prediction of addiction risk severity for pain and addiction treatment

Treatment outcomes may improve with accurate stratification of genetic addiction risk and scientifically accurate drug urine analysis; monitoring for compliance (Comp) to FDA approved medication(s) and abstinence (Abs) from drugs of abuse. Resting state functional magnetic imaging (rsfMRI) has been used to determine the impact of drugs like alcohol and heroin on functional connectivity of the brain reward circuitry. Study S1 is genetic addiction risk (GARS) stratification for Reward Deficiency Syndrome (RDS). The genetic polymorphisms [*DRD1=G; DRD2=AI; DRD3=C; DRD4=C; DAT1=9R; DRD4=7-11R; HTTLPR=S or Lg; MAOA=3.5-5R; COMT=G; OPRM1=G; and GABRB3=181*] most associated in addiction literature with RDS risk were tested and compared to Addiction Severity Index -Media Version (ASI-MV). S2 was a longitudinal statistical analysis of data from the Comprehensive Analysis of Reported Drugs (CARD) in patients (n=10,570) from chemical dependency programs. Comp and Abs was quantified in three groups: Medication Assisted Therapy (MAT) N=510; Methadone (MTD) N= 633 and Suboxone (SUBX) N=1299. S3 rsfMRI was used to test KB220Z a nutraceutical-dopamine agonist in rats using a segmented brain atlas S1. The percentage-prevalence of risk alleles was calculated and severity ranked in 223 subjects. All subjects tested positive for RDS risk alleles [40.4% with 9 or more; 30.9% with 7 or 8; 28.7% with 6 or less]. Utilizing chi^2 analysis, a predictive association between mixed gender individuals with 7 or higher risk alleles and ASI alcohol severity was significant (χ^2=8.38, df=1, P<0.004). Logistic regression suggests age (b=0.45, S.E.=0.11, Wald χ^2=15.29, df=1, p<0.001) and age + greater number of RDS risk alleles (b=0.741, S.E.=0.29, Wald χ^2=6.39, df=1, p=0.012) remained significant. S2. Improvement was significant: MAT: Comp ($p=2.2x10^{-16}$), Abs ($p=2.4x10^{-8}$); MTD: Comp ($P<2.2x10^{-16}$), Abs ($p=1.5x10^{-6}$) and SUBX: Comp ($p=2.2x10^{-16}$), Abs ($p=2.2x10^{16}$). Specifically, Comp to MTD [N=609] was 92% and SUBX [N=1135] was 87.4%; Abs from MTD was 52.7%; Abs from SUBX was 51% from the first and last urine tested. Longitudinal analyses revealed significantly reduced opiate abuse during treatment for both MTD (21.5%) and SUBX (18%). S3 KB220Z above placebo significantly increased BOLD functional connectivity and induced increases in brain volume recruitment in seed regions of interest (ROIs) across the brain reward circuitry S1. The GARS panel has been significantly associated with the alcohol severity score of the ASI and can provide information central to the implementation of relapse prevention and appropriate pain and addiction treatment S2. Subjects Comp to prescribed medications, were more likely to be Abs during treatment (p=0.0012; odds ratio=1.69 with 95% confidence interval (1.210, 2.354). Reduced opiate abuse during MTD and SUBX standard treatment should ameliorate opiate diversion and the need for US government restrictions S3. KB220Z above placebo increased reward regional connectivity, potentially enhancing homeostatic dopaminergic function. This response to KB220Z is selective and quite robust implying clinical relevance as an opioid substitution modality. Analysis of GARS as a predictor of opioid risk is underway. These study results have revealed solutions that can be directed to the treatment of RDS behaviors.

Biography

M Hauser has over 40 years of Addiction and Behavioral Health field experience including directing prevention, intervention, treatment and research programs; serving as adjunct faculty at multiple universities; and serving as a consultant at the State, Federal and Inpatient/Outpatient program level. Ms. Hauser has a Masters Degree in Psychology and has lectured and trained extensively around the country. Since 1999, Ms. Hauser has been the Vice President of the Addiction Services Division at Dominion Diagnostics.

mhauser@dominiondiagnostics.com