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Genetic Addiction Risk Score (GARS®) with precision Pro-Dopamine Regulation matched to polymorphic risk alleles to combat Reward Deficiency Syndrome (RDS) including Substance Use Disorder (SUD) globally

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Research into the neurogenetic basis of addiction identified and characterized by Reward Deficiency Syndrome (RDS) includes all drug and non-drug addictive, obsessive and compulsive behaviours. This keynote presents a new model for the prevention and treatment of RDS behaviours based on objective biologic evidence. Currently, research directed toward improving treatment for highly drug-dependent patients in underserved populations is the basis of an NIH grant awarded to Kenneth Blum and Marjorie Gondré-Lewis. The grant explores utilization of the Genetic Addiction Risk Score (GARS) and the neuronutrient pro-dopamine regulator KB220. The development of GARS followed seminal research in 1990, whereby, Blum's group identified the first genetic association with severe alcoholism. The non-invasive GARS test identifies and measures the total number of risk alleles of genes and catabolic enzymes affecting an individual's neurochemical hypodopaminergic function and has been associated in hundreds of studies with RDS behaviours. In an unpublished study, the GARS predicted drug and alcohol severity predisposition as measured by the Addiction Severity Index (ASI) [≤ 4 alleles for Drug & ≤ 7 alleles for Alcohol]. Genotyping data on approximately 1000 subjects [addicted, chronic pain, opioid maintained and non-addicted] will be presented. "Precision Behavioural Management" (PBM®) uses the GARS to customize KB220PAM formulations to deliver putative dopamine homeostasis based on developed algorithms matched to polymorphic results. Presented evidence derived from animal and human studies using BOLD neuroimaging and behavioural methodologies, support homeostatic activation of brain dopamine in the reward circuitry by KB220PAM, as well as anti-substance seeking and modification of RDS behaviours. RDS encompasses behaviours like PTSD, ADHD, over-eating, shopping, hoarding and related RDS cognitive insults. Combating the drug crisis requires PBM across ethnic groups, to bring dopamine homeostasis to those born with RDS predisposition. It is the goal through this novel model that by using PBM the addiction field will have a synergistic tool along with MAT or even alone, to overcome dopamine dysregulation either surfeit (adolescents) or deficit (adults) by the induction of "dopamine homeostasis."

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