Methods: Nine single-nucleotide polymorphisms (SNPs) of the NET gene (rs1794148, rs28386840, rs2244246) in promoter region, [rs1532701, rs40434, rs1333066] in intron 1, [rs187714] in intron 3, [rs569] in exon 9, and [rs42460] in exon 14) were analyzed in total 965 Han Chinese subjects. The Chinese version Tridimensional Personality Questionnaire was introduced to assess personality traits in HD patients and examined the association between personality traits and these SNPs of NET gene.

Results: No statistically significant differences in genotype frequencies of NET polymorphisms between HD patients and controls, although, individually with A allele of rs1532701 and T allele of rs1333066 have significant protective effect in the development of HD after multiple logistic regression analysis. Moreover, the AATA haplotype frequency in block (rs1532701-rs40434-rs1333066-rs187714) has a significant association between HD patients and controls. However, the nine polymorphisms of NET gene did not influence novelty seeking and harm avoidance scores in HD patients.

Conclusion: The AATA haplotype (rs1532701-rs40434-rs1333066-rs187714) of NET gene possibly plays a protective factor in the development of HD, but NET gene is not associated with the specific personality trait in HD patients.

Policy of full disclosure: None.

P-01.046 Chronic ketamine abuse causes dysfunctions of different brain areas relevant to neurodevelopmental psychiatric disorders: Evidence from fMRI in a primate model

H. Yu1, Q. Li1, D. Wong2, L. Shi3, M. Yi4, G. Lu2, S. Lin4, L. Wang2, M. Chen2, F. Fan2, D. Yew1, Shandong University, Jinan, China; 1The University of Hong Kong, Hong Kong SAR, China; 2The Chinese University of Hong Kong, Hong Kong SAR, China; 3The Chinese University of Hong Kong, Hong Kong SAR, China.

Objective: Ketamine is a noncompetitive N-methyl-D-aspartate (NMDA) receptor antagonist, and illegal use of it as a recreational drug among adolescence and young adult is rapidly growing. Many studies have showed that preferential dopaminergic system is particularly vulnerable to the toxic effects on cognitive functions. This suggests that chronic ketamine abuse in young people may cause a severe disruption of different brain areas relevant to psychiatric disorders.

Methods: We established a chronic ketamine abuse model using the adolescent cynomolgus monkeys administered with ketamine once a day (1 mg/kg, i.v.) for 6 months. Blood oxygenation level dependent (BOLD) contrast images were generated through stimulating the function of somatosensory area using functional magnetic resonance imaging (fMRI). Parallel and successive behavioral were observed.

Results: Chronic ketamine abuse in younger monkeys caused obvious deficits in the ventral tegmental area (VTA)/substantial nigra (SN), parietal cortex, and cingulate cortex. Besides, some increased activities were observed in striatum (lentiform nucleus, LN), fusiform gyrus (FG) and entorhinal cortex (Ent) on the right side of the brain in the chronic ketamine administered monkeys. Behaviour results showed significant differences of the movement in both control and ketamine groups with general and consistent decreased trend with time periods of ketamine administration.

Conclusion: Dysfunction of a projection from Ent to LN could play a role in ketamine abuse or induce epilepsy. We also found that deficit of cortical visual area in ketamine abuse model might cause a “positive schizophrenic syndrome.” Moreover, hypofunction of mesocortical dopamine pathway may induce a negative symptom in psychosis, or attention deficit disorder (ADD).

Policy of full disclosure: None.