1255F

Parents and teachers report on different aspect of children's and adolescent's conduct disorder and hyperactivity/inattention behavior. *X.W. Zhang[1,2], P.C. Sham[2,3], S.S. Cherny[2,3], H.Q. Meng[4], Y.X. Fu[4], Y. Huang[1], T. Li[1].* 1) Psychiatry, West China Hospital, Sichuan University, China; 2) Psychiatry, Hong Kong University, Hong Kong; 3) Genome Research Centre, Hong Kong University, Hong Kong; 4) Mental Health Center, First Affiliated Hospital, Chongqing Medical University, China.

Background: Either conduct disorder or hyperactivity/inattention problem poses considerable burden on health care and education, the co-occurrence bring more pressure and impairments for the children and their family. However, the etiology of overlapping is still unclear, and one of the reasons is assessment inconsistent in different cultural background. Method: Subjects were 433 twin pairs aged between 6 and 16 years from Prospective Twin Registry in Southwestern China, whose parent and teacher completed the Strengths and Difficulties Questionnaires. It both contained estimation on twins' conduct disorder and hyperactivity problem from different point of views. And then used the structure equation model to explore the relationship between conduct disorder or hyperactivity/inattention problem in children and adolescent. Results: Both in the bi-traits twin model and bi-raters twin model, biometric model was the best fitting one. According to this model, conduct disorder and hyperactivity behavior were correlated with phenotypic correlation 0.45-0.65, and genetics factors contributed majority (around 70%) to the covariance both for boys and girls on parent's view, whereas environmental also played important (around 55%) in teacher's view. Meanwhile, the results between parent's and teacher's information were not that consistence. The phenotypic correlation between two informants was less than 0.2. In bi-raters twin model fitting, rater bias model was rejected. in the best fitting model, the common environmental effect always contributed more on variance from teacher's point of view than from parent's point of view, so I alluded that they maybe observe the children in different occasions, or evaluate them without fixed reference group. Conclusion: conduct disorder and hyperactivity behavior are correlated with each other, substantially contributed by genetic factors, but not governed by the common specific underlying phenotype. The information from parents and teacher are disparity, and it suggests us to collect data from more than one informant when using questionnaire to evaluate conduct disorder or hyperactivity/inattention problem in China.

1256W

Association of *APOE* Polymorphism and Stressful Life Events with Dementia in the Pakistani Population. *M. Chaudhry[1], S. Hasnain[1], B. Snitz[2], X. Wang[3], D. Winger[4], L. Wang[4], S. Rosenthal[3], F.Y. Demirci[3], M.I. Kamboh[3].* 1) Department of Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan; 2) Department of Neurology, University of Pittsburgh, Pittsburgh, PA, USA; 3) Department of Human Genetics, University of Pittsburgh, Pittsburgh, PA, USA; 4) Clinical and Translational Science Institute, University of Pittsburgh, Pittsburgh, PA, USA.

Dementia is a major public health problem worldwide. Alzheimer's disease (AD) is a major form of dementia and the *APOE*4* allele is an established genetic risk factor for AD. Similarly, stressful life events (SLE) are also associated with dementia. The objective of this study was to examine the association of *APOE*4* and SLE with dementia in a Pakistani population, which to our knowledge has not been reported previously. We also tested for an interaction between SLE and *APOE*4* and the risk for dementia in this sample. A total of 176 subjects (61 cases and 115 controls) were recruited for this study. All pre-diagnosed cases and healthy controls were then interviewed to assess cognition, co-morbidities, history of SLE and possible differences in demographics. Blood samples were also drawn and genotyping for the *APOE* polymorphism (E2/E3/E4) was performed. The *APOE*4* and stressful life events were each independently significantly associated with the risk of dementia. The odds ratios (ORs) for *APOE*4* carriers and SLE were 2.81 (95%CI: 1.26-6.21; P=0.011) and 1.008 (95% CI: 1.004-1.012; P=1.15E-05), respectively. The gender stratified analysis revealed that *APOE*4* and SLE were independently associated with dementia in males but not in females. However, we did not find a significant interaction between *APOE*4* carrier status and stressful life events in affecting the risk of dementia (P=0.677). Although the sample size of this study was small, the established association of *APOE*4* with dementia was confirmed the first time in the Pakistani population. Furthermore, SLE was also found to be a significant predictor for dementia in this population. Our study also emphasizes the need to improve mental health facilities for older people in Pakistan and to facilitate future dementia research.

1257T

Association between MAOA and aggressive behavior in adolescents receiving the pharmaceutical treatment lisdexamfetamine dimesylate for ADHD symptoms. *K.A. Nelson, M.S.[1], A. Stoker[2], P. Huizenga, H.T.(ASCP), rLAT[1], S. Weaver, R.N.[1], T. Jung[1], E.A. Ehli, R.N., M.S.[1, 3], T.J. Soundy, M.D.[3], K. Bohlen, PharmD[1, 3], Y. Hu, Ph.D.[1, 3], G.E. Davies, Ph.D.[1, 3].* 1) Avera Institutue for Human Genetics, Avera McKennan Hospital and University Health Center, Sioux Falls, SD; 2) University of South Dakota, Sanford School of Medicine, Sioux Falls, South Dakota; 3) Department of Psychiatry, University of South Dakota, Sanford School of Medicine, Sioux Falls, South Dakota.

Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood neuropsychiatric disorders, affecting 5.29% of children worldwide. ADHD symptoms manifest as severely disruptive behaviors of inattention, hyperactivity, and/or impulsiveness. The pharmaceutical lisdexamfetamine dimesylate (LDX [Vyvanse®]), a prodrug stimulant prescribed for ADHD, is thought to alleviate symptoms by inhibiting the dopamine and norepinephrine reuptake pathways. Monoamine oxidase A (MAOA) is an X-chromosome linked gene that catalyzes the degradation of dopamine and norepinephrine. The number of 30-bp repeats located in the polymorphic MAOA promoter region has been shown to alter the enzymatic degradation of dopamine and norepinephrine. Wildtype alleles consist of 3.5 or 4 repeats (high enzymatic activity alleles). The genotypes of 2, 3, or 5 repeats (low enzymatic activity alleles) have been associated with increased aggression in males. This study looked at adolescents being treated for ADHD symptoms with LDX. Nearly half of the study individuals discontinued the medication due to aggressive behavior. Here, we hypothesized that individuals with the low enzymatic activity MAOA alleles would be the individuals more likely to discontinue the drug due to aggressive behavior than individuals with the higher MAOA enzymatic activity genotypes. The study sample included 73 adolescents averaged 12 (6–18) years in age. The final study sample was 85% male and 90% Caucasian. All individuals were being treated within a behavioral health outpatient facility by licensed child psychiatrists for ADHD symptoms. After the ADHD diagnosis, each individual at one time during their treatment, received LDX medication. Each child's buccal cell DNA was used to perform the genotyping of the MAOA 30-bp polymorphism. We found that individuals with high MAOA enzymatic activity alleles were significantly more likely to discontinue LDX due to aggression than individuals with the low enzymatic activity MAOA alleles (OR=0.3083 [95% CI: 0.11, 0.86] p=0.02). Stimulant medications are the first-line pharmacological treatment for children with ADHD. Although these treatments are very effective for the majority of its users, there are patients who can experience considerable adverse side effects. This study has shown a significant association between the discontinuation of LDX due to aggressive behaviors in adolescents with the high MAOA enzymatic activity alleles (3.5 and 4).