A Genome-wide Association Study on the Endophenotype of Spatial Working Memory in ADHD

This study is currently recruiting participants. (see Contacts and Locations)

Verified March 2016 by National Taiwan University Hospital

Sponsor:
National Taiwan University Hospital

Information provided by (Responsible Party):
National Taiwan University Hospital

ClinicalTrials.gov Identifier:
NCT02710929

First received: March 13, 2016
Last updated: NA
Last verified: March 2016
History: No changes posted

Purpose

Specific Aims:

1. To find the genetic variations associated with spatial working memory performance in patients with ADHD by using genome-wide association studies (GWAS);

2. To find the genetic variations associated with spatial working memory performance in healthy subjects by using GWAS;

3. To recruit a validation sample and to replicate the findings from the initial GWAS;

4. To test whether genetic variations significantly associated with spatial working memory are also associated with ADHD.

<table>
<thead>
<tr>
<th>Condition</th>
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<tbody>
<tr>
<td>Attention-deficit/Hyperactivity Disorder</td>
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Study Type: Observational

Study Design: Observational Model: Case Control
Time Perspective: Cross-Sectional

Official Title: A Genome-wide Association Study on the Endophenotype of Spatial Working Memory in ADHD
Attention Deficit Hyperactivity Disorder

Resource links provided by NLM:

MedlinePlus related topics: Attention Deficit Hyperactivity Disorder Memory
U.S. FDA Resources

Further study details as provided by National Taiwan University Hospital:

Primary Outcome Measures:
- Psychiatric interview [Time Frame: 1 hour] [Designated as safety issue: No]
  Subjects will be interviewed by Chinese Version of the Kiddie Epidemiologic version of the Schedule for Affective Disorders and Schizophrenia (K-SADS-E)

Secondary Outcome Measures:
- Spatial working memory [Time Frame: 30 minutes] [Designated as safety issue: No]
  Subjects will be assessed by the Cambridge Neuropsychological Test Automated Battery (CANTAB)

Biospecimen Retention: Samples With DNA
15 ml blood will be withdrawn from the subjects (one heparin-rinsed tube for cell culture, one EDTA rinsed tube for DNA extraction)

Estimated Enrollment: 232

Study Start Date: August 2015

Estimated Primary Completion Date: July 2018 (Final data collection date for primary outcome measure)

<table>
<thead>
<tr>
<th>Groups/Cohorts</th>
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<tbody>
<tr>
<td>ADHD group</td>
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<tr>
<td>Subjects with clinical diagnosis of ADHD according to the DSM-IV criteria</td>
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<td>TD group</td>
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<td>Typically development controls without lifetime diagnosis with ADHD</td>
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Detailed Description:
Attention deficit hyperactivity disorder (ADHD), characterized by inattention, hyperactivity and impulsivity, is an early onset, highly heritable, clinically heterogeneous, long-term impairing disorder with tremendous impact on individuals, families, and societies. Our research team has conducted a series of biological studies on spatial working
memory deficits of ADHD, and substantial evidence has suggested spatial working memory deficits as the important neuropsychological biomarker with translational values and favorable endophenotypic properties for ADHD. Despite the abundance of molecular genetic studies on ADHD, the genetic etiologies of ADHD have been non-conclusive. Because genetic studies on endophenotypes can offer more information on genetic and brain process, endophenotypic approach can efficiently enhance the statistical power and make genome-wide association studies (GWAS) applicable in much smaller sample. To date, there has been no GWAS study on spatial working memory deficits of ADHD.

This is a 3-year project. Our previous studies have collected blood samples and spatial working memory data of 382 patients with ADHD and 150 healthy subjects. In this 3-year project, we will recruit 232 healthy subjects, aged 7-18 years. The measures include (1) interviews for psychopathology (K-SADS-E), (2) questionnaires to measures ADHD symptoms (SNAP-IV), and (3) neuropsychological tests: Spatial Working Memory task of the CANTAB. In the first year, a case-only GWAS on spatial working memory (n = 254) will be conducted. In the second year, a control-only GWAS on spatial working memory (n = 254) will be conducted. In the third year, findings from the initial two GWAS will be replicated in a validation sample composed of 128 patients with ADHD and 128 healthy controls.

By careful calculation, a sample size of 382 ADHD subjects will provide adequate power to detect genome-wide significant genetic variations and replicate the findings in an independent validation sample. We anticipate to identify the relationship between genetic variations of ADHD and the endophenotype of spatial working memory. Our findings will significantly contribute to our understanding of the pathophysiological mechanisms of ADHD, especially the pathological pathway from genes, through endophenotype, to behavioral phenotypes.

Eligibility

Ages Eligible for Study: 7 Years to 18 Years
Genders Eligible for Study: Both
Accepts Healthy Volunteers: Yes
Sampling Method: Non-Probability Sample

Study Population

The existing sample is composed of 382 children with ADHD and 150 healthy subjects. We plan to recruit additional 232 healthy subjects (104 in the first year; 128 in the second year), aged 7 to 18 years.

Criteria

Inclusion Criteria:

- Subjects without any current or lifetime DSM-IV psychiatric disorders based on the K-SADS-E interviews.

Exclusion Criteria:

- Participants who had any past or current medical or neurological illness, who currently took psychotropic medication, or whose intelligence quotient (IQ) score was less than 80 were excluded.

Contacts and Locations

Choosing to participate in a study is an important personal decision. Talk with your doctor and family members or friends about deciding to join a study. To learn more about this study, you or your doctor may contact the study research staff using the Contacts provided below. For general information, see Learn About Clinical Studies.

Please refer to this study by its ClinicalTrials.gov identifier: NCT02710929

Contacts

Contact: Chi-Yung Shang, MD 886-2-23123456 ext 66965 cyshang@ntu.edu.tw
Locations

Taiwan

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Sponsors and Collaborators
National Taiwan University Hospital

Investigators
Principal Investigator: Chi-Yung Shang, MD  Dept of Psychiatry, National Taiwan University Hospital

More Information

No publications provided

Responsible Party: National Taiwan University Hospital
ClinicalTrials.gov Identifier: NCT02710929  History of Changes
Other Study ID Numbers: 201412157RINA
Study First Received: March 13, 2016
Last Updated: March 13, 2016
Health Authority: Taiwan: Ministry of Health and Welfare

Additional relevant MeSH terms:
Attention Deficit Disorder with Hyperactivity Mental Disorders Diagnosed in Childhood
Hyperkinesis Nervous System Diseases
Attention Deficit and Disruptive Behavior Disorders Neurologic Manifestations
Dyskinesias Signs and Symptoms
Mental Disorders

ClinicalTrials.gov processed this record on March 17, 2016