Purpose
The primary aims of this study focus on characterizing the relationship between atomoxetine exposure and clinical outcomes, as assessed by standardized measures. We will also simultaneously monitor side effect of atomoxetine, another measure of clinical outcomes, and categorize study participants on their ability to tolerate atomoxetine.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADHD</td>
<td>Drug: Atomoxetine Hydrochloride</td>
</tr>
</tbody>
</table>

Study Type: Observational

Study Design: Observational Model: Cohort
Time Perspective: Prospective

Official Title: An Open-Label, Single- and Multi-Dose Study to Evaluate the Relationship Between the Pharmacokinetics, Pharmacodynamics, and Clinical Outcomes of Atomoxetine in CYP2D6 Extensive, Intermediate, and Poor Metabolizers in Children With Attention Deficit/Hyperactivity Disorder
Drug Information available for: Atomoxetine hydrochloride Atomoxetine

U.S. FDA Resources

Further study details as provided by Children's Mercy Hospital Kansas City:

Primary Outcome Measures:

- Pharmacodynamic - metabolomic [Time Frame: 18 weeks]
  Global neurotransmitter metabolome panel

- Pharmacodynamic - activity [Time Frame: 18 weeks]
  Pupillometry as surrogate for central drug action

- Incidence of adverse events [Time Frame: 18 weeks]
  Cardiovascular safety will be assessed by examining elevations in heart rate and blood pressure pre vs. post-treatment. The parent and teacher medication side effect questionnaire will also be used to assess whether or not the intervention resulted in clinically unacceptable adverse events. All adverse events will be reported in the same units, specifically the number of children experiencing the event.

- Therapeutic Response (responder vs. non-responder) [Time Frame: 18 weeks]
  Measured by questionnaire as a dichotomous "yes/no" outcome.

Estimated Enrollment: 120

Anticipated Study Start Date: September 1, 2017

Estimated Study Completion Date: June 30, 2022

Estimated Primary Completion Date: June 30, 2022 (Final data collection date for primary outcome measure)

Intervention Details:
Drug: Atomoxetine Hydrochloride
Atomoxetine dose adjusted to achieve pre-defined concentration

Eligibility

Ages Eligible for Study: 6 Years to 18 Years (Child, Adult)
Sexes Eligible for Study: All
Accepts Healthy Volunteers: No
Sampling Method: Non-Probability Sample

Study Population
Males and females 6-18 years of age, with a diagnosis of ADHD.

Criteria

Inclusion Criteria:

- Males and females 6-18 years of age
- Diagnosis of ADHD.
- It is the intention of the treating physician to begin therapy with atomoxetine (ATX).
- ADHD-medication naïve or willing to undergo a two week wash out period.
- Willing to provide written permission/assent to participate.

Exclusion Criteria:

- An IQ < 70.
  - Inability or unwillingness to have blood drawn.
  - Concurrent therapy with drugs known to inhibit CYP2D6 and unwilling or unable to undergo a washout period. This includes medications such as fluoxetine, sertraline, paroxetine, venlafaxine, imipramine, nortriptyline, quinidine, propafenone, cimetidine, tamoxifen, bupropion, over-the-counter medications containing diphenhydramine, codeine, tramadol, hydrocodone, or oxycodone.
  - Previous treatment with strong CYP2D6 inhibitors, such as fluoxetine or paroxetine (two month wash-out required), or terbenafine (six month wash-out required).
  - Underlying risk for cardiotoxicity, such as presentation of structural cardiac abnormalities, cardiomyopathy, or arrhythmias.
  - Clinically significant abnormal safety laboratory values as determined by treating physician
  - Presentation of diagnosis that may cause abnormal absorption or gastric emptying, such as reflux, inflammatory bowel disease, or Crohn's disease.
  - For females, a positive urine pregnancy test.
  - Previous history of adverse drug reaction to ATX.

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: NCT03154359

Contacts

Contact: James S Leeder, PharmD, Phd 816-234-3059 sleeder@cmh.edu
Contact: Jaylene Weigel, RN 816-234-3059 jweigel@cmh.edu
Sponsors and Collaborators
Children's Mercy Hospital Kansas City
Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)

More Information

Responsible Party: Children's Mercy Hospital Kansas City
ClinicalTrials.gov Identifier: NCT03154359
Other Study ID Numbers: 16100728
U54HD090258-01 (US NIH Grant/Contract Award Number)

Study First Received: May 4, 2017
Last Updated: May 12, 2017

Individual Participant Data
Plan to Share IPD: Undecided

Studies a U.S. FDA-regulated Drug Product: Yes
Studies a U.S. FDA-regulated Device Product: No
Product Manufactured in and Exported from the U.S.: No

Additional relevant MeSH terms:
Attention Deficit Disorder with Hyperactivity
Attention Deficit and Disruptive Behavior Disorders
Neurodevelopmental Disorders
Mental Disorders
Atomoxetine Hydrochloride
Adrenergic Uptake Inhibitors
Neurotransmitter Uptake Inhibitors
Membrane Transport Modulators
Molecular Mechanisms of Pharmacological Action
Adrenergic Agents
Neurotransmitter Agents
Physiological Effects of Drugs

ClinicalTrials.gov processed this record on May 16, 2017