Principal Investigator

First Name: Bo
Last Name: Cao
Degree: PhD
Primary Affiliation: University of Alberta
E-mail: cloudbocao@gmail.com
Phone number: 6176520513
Address:

City: Edmonton
State or Province: Alberta
Zip or Postal Code: T6G 2B7
Country: Canada

General Information

Key Personnel (in addition to PI):

First Name: Bo
Last name: Cao
Degree: PhD
Primary Affiliation: University of Alberta
SCOPUS ID:

First Name: Yang
Last name: Liu
Degree: PhD
Primary Affiliation: University of Alberta
SCOPUS ID:

First Name: Faramarz
Last name: Jabbari-zadeh
Degree: BSc-to-be
Primary Affiliation: University of Alberta
SCOPUS ID:

First Name: Samantha
Last name: Perreault
Degree: BSc
Primary Affiliation: University of Alberta
SCOPUS ID:

First Name: Fernanda
Last name: Talarico
Degree: MSc
Primary Affiliation: University of Alberta
SCOPUS ID:

First Name: Yipeng
Last name: Song
Degree: PhD
Primary Affiliation: University of Alberta
SCOPUS ID:

.misc-fixes { display: none; } #admin-region { z-index: 9999999; } #admin-menu { z-index: 99999999; }

Are external grants or funds being used to support this research?: External grants or funds are being used to support this research.
Project Funding Source: MITACS
How did you learn about the YODA Project?: Data Holder (Company)

Conflict of Interest

https://yoda.yale.edu/system/files/yoda_project_coi_form_for_data_requestors_2019_1.pdf
https://yoda.yale.edu/system/files/coi_form_farah_0.pdf
https://yoda.yale.edu/system/files/coi_form_yang_0.pdf
https://yoda.yale.edu/system/files/sperreault_yoda_project_coi_form_for_data_request.pdf
https://yoda.yale.edu/system/files/talarico_yoda_project_coi_form_for_data_requestors_2019.pdf
https://yoda.yale.edu/system/files/yoda_project_coi_form_for_data_requestors_2019_yp.pdf

Certification

Certification: All information is complete; I (PI) am responsible for the research; data will not be used to support litigious/commercial aims.
Data Use Agreement Training: As the Principal Investigator of this study, I certify that I have completed the YODA Project Data Use Agreement Training

1. NCT00307684 - 42603ATT3004 - An Open International Multicentre Long-Term Follow Up Study to Evaluate Safety of Prolonged Release OROS Methlyphenidate in Adults With Attention Deficit Hyperactivity Disorder
2. NCT00326300 - 12-304 - An Open-Label, Dose-Titration, Long-Term Safety Study to Evaluate CONCERTA (Methylphenidate HCL) Extended-release Tablets at Doses of 36 mg, 54 mg, 72 mg, 90 mg, and 108 mg Per Day in Adults With Attention Deficit Hyperactivity Disorder
3. NCT00246220 - 42603ATT3002 - A Multicentre, Randomised, Double-Blind, Placebo-Controlled, Parallel Group, Dose-Response Study To Evaluate the Safety And Efficacy Of Prolonged Release OROS Methylphenidate Hydrochloride (18, 36 and 72 mg/Day), With Open-Label Extension, In Adults With Attention Deficit/Hyperactivity Disorder
4. NCT00488319 - R076477PSZ3002 - A 2-Year, Open-Label, Single-Arm Safety Study of Flexibly Dosed Paliperidone Extended Release (1.5-12 mg/day) in the Treatment of Adolescents (12 to 17 Years of Age) With Schizophrenia
5. NCT01009047 - R076477PSZ3003 - A Randomized, Multicenter, Double-Blind, Active-Controlled, Flexible-Dose, Parallel-Group Study of the Efficacy and Safety of Prolonged Release Paliperidone for the Treatment of Symptoms of Schizophrenia in Adolescent Subjects, 12 to 17 Years of Age
6. NCT00645099 - R076477SCH3020 - A Prospective Randomized Open-label 6-Month Head-To-Head Trial to Compare Metabolic Effects of Paliperidone ER and Olanzapine in Subjects With Schizophrenia
7. NCT00518323 - R076477PSZ3001 - A Randomized, Multicenter, Double-Blind, Weight-Based, Fixed-Dose, Parallel-Group, Placebo-Controlled Study of the Efficacy and Safety of Extended Release Paliperidone for the Treatment of Schizophrenia in Adolescent Subjects, 12 to 17 Years of Age
8. NCT01606228 - R076477SCH3033 - An Open-Label Prospective Trial to Explore the Tolerability, Safety and Efficacy of Flexibly-Dosed Paliperidone ER among Treatment-Naive and Newly Diagnosed Patients with Schizophrenia
9. NCT00334126 - R076477SCH3015 - A Randomized, Double-blind, Placebo-controlled, Parallel Group Study to Evaluate the Efficacy and Safety of Paliperidone ER Compared to Quetiapine in Subjects With an Acute Exacerbation of Schizophrenia
10. NCT00086320 - R076477-SCH-301 - A Randomized, Double-blind, Placebo-controlled, Parallel-group Study With an Open-label Extension Evaluating Paliperidone Extended Release Tablets in the Prevention of Recurrence in Subjects With Schizophrenia
11. NCT00650793 - R076477-SCH-703 - A Randomized, DB, PC and AC, Parallel Group, Dose-Response Study to Evaluate the Efficacy and Safety of 3 Fixed Dosages of Extended Release OROS Paliperidone (6, 9, 12 mg/Day) and Olanzapine (10 mg/Day), With Open-Label Extension, in the Treatment of Subjects With Schizophrenia - Open Label Phase
12. NCT00589914 - R092670PSY3006 - A Randomized, Double-Blind, Parallel-Group, Comparative Study of

Flexible Doses of Paliperidone Palmitate and Flexible Doses of Risperidone Long-Acting Intramuscular Injection in Subjects With Schizophrenia

13. NCT00604279 - R092670PSY3008 - A Randomized, Open-Label, Parallel Group Comparative Study of Paliperidone Palmitate (50, 100, 150 mg eq) and Risperidone LAI (25, 37.5, or 50 mg) in Subjects with Schizophrenia
14. NCT00590577 - R092670PSY3007 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose Response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (25 mg eq., 100 mg eq., and 150 mg eq.) of Paliperidone Palmitate in Subjects With Schizophrenia
15. NCT00111189 - R092670PSY3001 - A Randomized Double-blind Placebo-controlled Parallel Group Study Evaluating Paliperidone Palmitate in the Prevention of Recurrence in Patients With Schizophrenia. Placebo Consists of 20% Intralipid (200 mg/mL) Injectable Emulsion
16. NCT00210717 - R092670PSY3002 - A Randomized, Double-Blind, Parallel Group, Comparative Study of Flexibly Dosed Paliperidone Palmitate (25, 50, 75, or 100 mg eq.) Administered Every 4 Weeks and Flexibly Dosed RISPERDAL CONSTA (25, 37.5, or 50 mg) Administered Every 2 Weeks in Subjects With Schizophrenia
17. NCT00119756 - R092670PSY3005 - A Randomized, Crossover Study to Evaluate the Overall Safety and Tolerability of Paliperidone Palmitate Injected in the Deltoid or Gluteus Muscle in Patients With Schizophrenia
18. NCT00210548 - R092670PSY3003 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose-Response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (50 mg eq., 100 mg eq., and 150 mg eq.) of Paliperidone Palmitate in Subjects With Schizophrenia
19. NCT00101634 - R092670PSY3004 - A Randomized, Double-blind, Placebo-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 3 Fixed Doses (25 mg eq, 50 mg eq, and 100 mg eq) of Paliperidone Palmitate in Patients With Schizophrenia
20. NCT00391222 - RISBMN3001 - A Randomized, Double Blind, Placebo and Active Controlled Parallel Group Study to Evaluate the Efficacy and Safety of Risperidone Long-acting Injectable (LAI) for the Prevention of Mood Episodes in the Treatment of Subjects With Bipolar I Disorder
21. NCT00034749 - RIS-USA-231 - The Efficacy and Safety of Risperidone in Adolescents With Schizophrenia: a Comparison of Two Dose Ranges of Risperidone
22. NCT00076115 - RIS-BIM-301 - Research on the Effectiveness of Risperidone in Bipolar Disorder in Adolescents and Children (REACH): A Double-Blind, Randomized, Placebo-Controlled Study of the Efficacy and Safety of Risperidone for the Treatment of Acute Mania in Bipolar I Disorder
23. NCT00132678 - RISBIM3003 - A Randomized, Double-blind, Placebo-controlled Study to Explore the Efficacy and Safety of Risperidone Long-acting Intramuscular Injectable in the Prevention of Mood Episodes in Bipolar 1 Disorder, With Open-label Extension
24. NCT00094926 - RIS-BIP-302 - A Prospective, Randomized, Double-blind, Placebo-controlled Study of the Effectiveness and Safety of RISPERDAL CONSTA Augmentation in Adult Patients With Frequently-relapsing Bipolar Disorder
25. NCT00210782 - CAPSS-272 - A Double-blind Trial Comparing the Efficacy, Tolerability and Safety of Monotherapy Topiramate Versus Phenytoin in Subjects With Seizures Indicative of New Onset Epilepsy
26. NCT00714688 - 42603ATT3013 - A Multicentre, Randomized, Double-Blind, Placebo-Controlled, Parallel Group, Dose-Response Study to Evaluate Efficacy and Safety of Prolonged Release (PR) OROS Methylphenidate (54 and 72 mg/Day) in Adults With Attention Deficit/Hyperactivity Disorder
27. NCT00866996 - CR008329 (12-101) - A Multi-center Randomized Parallel Group Study Evaluating Treatment Outcomes of Concerta (Extended Release Methylphenidate) and Strattera (Atomoxetine) in Children With Attention-deficit/Hyperactivity Disorder
28. NCT00269815 - C98012 - Long-term Safety and Effectiveness of OROS (Methylphenidate HCl) in Children With ADHD
29. NCT00397033 - R076477SCA3001 - A Randomized, Double-blind, Placebo-controlled, Parallel-group Study to Evaluate the Efficacy and Safety of Two Dosages of Paliperidone ER in the Treatment of Patients With Schizoaffective Disorder
30. NCT00412373 - R076477SCA3002 - A Randomized, Double-blind, Placebo-controlled, Parallel- Group Study to Evaluate the Efficacy and Safety of Flexible-dose Paliperidone ER in the Treatment of Patients With Schizoaffective Disorder
31. NCT00236444 - CR002020 (RIS-INT-79) - Risperidone in the Prevention of Relapse: a Randomized, Double-blind, Placebo-controlled Trial in Children and Adolescents With Conduct and Other Disruptive Behavior Disorders
32. NCT00236470 - CR002149 (RIS-INT-84) - Risperidone in the Treatment of Children and Adolescents With Conduct and Other Disruptive Behavior Disorders - an Open Label Follow-up Trial of CR002020

.misc-fixes { display: none; } #admin-region { z-index: 9999999; } #admin-menu { z-index: 99999999; }

33. NCT00250354 - CR006007 (RIS-CAN-19) - The Safety And Efficacy Of Risperidone Versus Placebo In Conduct Disorder In Mild, Moderate And Borderline Mentally Retarded Children Aged 5 To 12 Years
34. NCT00266552 - CR006019 (RIS-USA-93) - The Safety And Efficacy Of Risperidone Versus Placebo In Conduct Disorder and Other Disruptive Behavior Disorders In Mild, Moderate And Borderline Mentally Retarded Children Aged 5 To 12 Years
35. NCT00237289 - CR002653 (CAPSS-168) - Topiramate Versus Placebo as add-on Treatment in Patients With Bipolar Disorder in the Outpatient Setting
36. NCT00240721 - TOPMAT-PDMD-005 (CR002248) - A Randomized, Double-Blind, Multicenter, Placebo-Controlled 12-Week Study Of The Safety And Efficacy Of Two Doses Of Topiramate For The Treatment Of Acute Manic Or Mixed Episodes In Subjects With Bipolar I Disorder With An Optional Open-Label Extension
37. NCT00037674 - TOPMAT-PDMD-004 - A Randomized, Double-Blind, Multicenter, Placebo-Controlled 12-Week Study of the Safety and Efficacy of Two Doses of Topiramate for the Treatment of Acute Manic or Mixed Episodes in Patients With Bipolar I Disorder With an Optional Open-Label Extension
38. NCT00035230 - TOPMAT-PDMD-008 - A Randomized, Double-Blind, Multicenter, Placebo-Controlled 12-Week Study of the Safety and Efficacy of Topiramate in Patients With Acute Manic or Mixed Episodes of Bipolar I Disorder With an Optional Open-Label Extension
39. TOPMAT-PDMD-006 - A Randomized, Double-Blind, Multicenter, Placebo-Controlled, 21-Day Study of the Safety and Efficacy of Topiramate for the Treatment of Acute Manic or Mixed Episodes in Subjects With Bipolar I Disorder With an Optional Open-Label Extension
40. NCT00799409 - CONCERTA-ATT-4069 - The ABC Study: A Double-Blind, Randomized, Placebo-Controlled, Crossover Study Evaluating the Academic, Behavioral, and Cognitive Effects of CONCERTA on Older Children With ADHD
41. NCT00799487 - CONCERTA-ATT-4080 - Double-Blind, Randomized, Placebo-Controlled, Crossover Study Evaluating the Academic, Behavioral and Cognitive Effects of CONCERTA on Older Children With ADHD (The ABC Study)
42. NCT00249132 - RIS-INT-3 - A Canadian multicenter placebo-controlled study of fixed doses of risperidone and haloperidol in the treatment of chronic schizophrenic patients
43. NCT00216476 - RISSCH3001 - CONSTATRE: Risperdal® Consta® Trial of Relapse Prevention and Effectiveness
44. NCT00216580 - RIS-PSY-301 - An Open-label Trial of Risperidone Long-acting Injectable in the Treatment of Subjects With Recent Onset Psychosis
45. NCT00253162 - RIS-INT-69 - The Efficacy And Safety Of Flexible Dose Ranges Of Risperidone Versus Placebo Or Haloperidol In The Treatment Of Manic Episodes Associated With Bipolar I Disorder
46. NCT00378092 - CR011992, RISSCH3024 - A Prospective Study of the Clinical Outcome Following Treatment Discontinuation After Remission in First-Episode Schizophrenia
47. NCT00299715 - R076477-BIM-3001 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose-Response, Multicenter Study to Evaluate the Efficacy and Safety of Three Fixed Doses of Extended-Release Paliperidone in the Treatment of Subjects With Acute Manic and Mixed Episodes Associated With Bipolar I Disorder
48. NCT00309699 - R076477-BIM-3002 - A Randomized, Double-Blind, Active- and Placebo-Controlled, Parallel-Group, Multicenter Study to Evaluate the Efficacy and Safety of Flexibly-Dosed, Extended-Release Paliperidone Compared With Flexibly-Dosed Quetiapine and Placebo in the Treatment of Acute Manic and Mixed Episodes Associated With Bipolar I Disorder
49. NCT00309686 - R076477-BIM-3003 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Multicenter Study to Evaluate the Efficacy and Safety of Flexibly-Dosed Extended-Release Paliperidone as Adjunctive Therapy to Mood Stabilizers in the Treatment of Acute Manic and Mixed Episodes Associated With Bipolar I Disorder
50. NCT00752427 - R076477-SCH-702 - 24 week extension of NCT00085748: A Randomized, 6-Week Double-Blind, Placebo-Controlled Study With an Optional 24-Week Open-Label Extension to Evaluate the Safety and Tolerability of Flexible Doses of Paliperidone Extended Release in the Treatment of Geriatric Patients With Schizophrenia
51. NCT00077714 - R076477-SCH-304 - A Randomized, Double-blind, Placebo- and Active-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 2 Fixed Dosages of Paliperidone Extended Release Tablets and Olanzapine, With Open-label Extension, in the Treatment of Patients With Schizophrenia
52. NCT00083668 - R076477-SCH-305 - A Randomized, Double-blind, Placebo- and Active-controlled, Parallel-group, Dose-response Study to Evaluate the Efficacy and Safety of 3 Fixed Dosages of Paliperidone Extended Release (ER) Tablets and Olanzapine, With Open-label Extension, in the Treatment of Patients With Schizophrenia

.misc-fixes { display: none; } #admin-region { z-index: 9999999; } #admin-menu { z-index: 99999999; }

53. NCT00074477 - R092670-SCH-201 - A Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Efficacy and Safety of 50 and 100 Mg-eq of Paliperidone Palmitate in Patients With Schizophrenia
54. NCT00078039 - R076477-SCH-303 - Trial Evaluating Three Fixed Dosages of Paliperidone Extended-Release (ER) Tablets and Olanzapine in the Treatment of Patients With Schizophrenia
55. NCT00085748 - R076477-SCH-302 - A Randomized, 6-Week Double-Blind, Placebo-Controlled Study With an Optional 24-Week Open-Label Extension to Evaluate the Safety and Tolerability of Flexible Doses of Paliperidone Extended Release in the Treatment of Geriatric Patients With Schizophrenia
56. NCT00937040 - CR015058 (CONCERTA-ATT-3014) - A Placebo Controlled Double-Blind, Parallel Group, Individualizing Dosing Study Optimizing Treatment of Adults With Attention Deficit Hyperactivity Disorder to an Effective Response With OROS Methylphenidate
57. NCT00261508 - RIS-CAN-23/CR006106 - Efficacy And Safety Of Risperidone In The Treatment Of Children With Autistic Disorder And Other Pervasive Developmental Disorders: A Canadian, Multicenter, Double-Blind, Placebo-Controlled Study
58. NCT00249236 - RIS-IND-2/CR006064 - The Efficacy And Safety Of Flexible Dosage Ranges Of Risperidone Versus Placebo In The Treatment Of Manic Or Mixed Episodes Associated With Bipolar I Disorder
59. NCT00250367 - RIS-INT-46/CR006058 - The Safety And Efficacy Of Risperdal (Risperidone) Versus Placebo As Add-On Therapy To Mood Stabilizers In The Treatment Of The Manic Phase Of Bipolar Disorder
60. NCT00088075 - RIS-SCH-302/CR003370 - A Randomized, Double-Blind, Placebo-Controlled Clinical Study of the Efficacy and Safety of Risperidone for the Treatment of Schizophrenia in Adolescents
61. RIS-USA-1 (RIS-USA-9001) - Risperidone versus haloperidol versus placebo in the treatment of schizophrenia
62. NCT00253149 - RIS-USA-102/CR006040 - The Safety And Efficacy Of Risperdal (Risperidone) Versus Placebo Versus Haloperidol As Add-On Therapy To Mood Stabilizers In The Treatment Of The Manic Phase Of Bipolar Disorder
63. NCT00253136 - RIS-USA-121/CR006055 - Risperidone Depot (Microspheres) vs. Placebo in the Treatment of Subjects With Schizophrenia
64. RIS-USA-150 - A double-blind, placebo-controlled study of risperidone in children and adolescents with autistic disorder
65. NCT00257075 - RIS-USA-239/CR006052 - The Efficacy And Safety Of Flexible Dosage Ranges Of Risperidone Versus Placebo In The Treatment Of Manic Episodes Associated With Bipolar I Disorder
66. RIS-USA-240 - The efficacy and safety of flexible dose ranges of risperidone vs. Placebo or divalproex sodium in the treatment of manic or mixed episodes associated with bipolar 1 disorder
67. RIS-USA-72 - The safety and efficacy of risperidone 8 mg qd and 4 mg qd compared to placebo in the treatment of schizophrenia
68. NCT01529515 - R092670PSY3012 - A Randomized, Multicenter, Double-Blind, Relapse Prevention Study of Paliperidone Palmitate 3 Month Formulation for the Treatment of Subjects With Schizophrenia
69. NCT01193153 - R092670SCA3004 - A Randomized, Double-Blind, Placebo-Controlled, Parellel-Group Study of Paliperidone Palmitate Evaluating Time to Relapse in Subjects With Schizoaffective Disorder
70. NCT01662310 - R076477-SCH-3041 - Paliperidone Extended Release Tablets for the Prevention of Relapse in Subjects With Schizophrenia: A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study
71. NCT00490971 - R076477BIM3004 - A Randomized, Double-Blind, Active- and Placebo-controlled, Parallel-group, Multicenter Study to Evaluate the Efficacy and Safety of Extended-Release Paliperidone as Maintenance Treatment After an Acute Manic or Mixed Episode Associated With Bipolar I Disorder
72. NCT00524043 - R076477SCH4012 - A Randomized, Double-Blind, Placebo- and Active-Controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of a Fixed Dosage of 1.5 mg/Day of Paliperidone Extended Release (ER) in the Treatment of Subjects With Schizophrenia
73. NCT00105326 - R076477-SCH-1010/CR002281 - A Double-blind, Placebo-controlled, Randomized Study Evaluating the Effect of Paliperidone ER Compared With Placebo on Sleep Architecture in Subjects With Schizophrenia
74. YP - A double-blind, randomized trial of topiramate as adjunctive therapy for partial-onset seizures in children
75. NCT00645307 - R076477-SCH-701 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group Study With an Open-Label Extension Evaluating Extended Release OROS® Paliperidone in the Prevention of Recurrence in Subjects With Schizophrenia - Open Label Phase
76. NCT00326391 - 02-159/CR011560 - A Placebo-Controlled, Double-Blind, Parallel-Group, Dose-Titration Study to Evaluate the Efficacy and Safety of CONCERTA (Methylphenidate HCl) Extended-release Tablets

in Adults With Attention Deficit Hyperactivity Disorder at Doses of 36 mg, 54 mg, 72 mg, 90 mg, or 108 mg Per Day

77. NCT01323192 - JNS001-JPN-A01 - A Double-blind, Placebo-controlled, Parallel-Group Study to Evaluate the Efficacy and Safety of JNS001 in Adults With Attention-Deficit/Hyperactivity Disorder at Doses of 18 mg, 36 mg, 54 mg, or 72 mg Per Day
78. NCT00246233 - 42603MDD3001 (CON-CAN-3) - A Double-blind, Placebo-controlled, Randomized Trial to Evaluate the Safety, Tolerability and Efficacy of CONCERTA® (Methylphenidate Hydrochloride) Augmentation of SSRI/SNRI Monotherapy in Adult Patients With Major Depressive Disorder.
79. NCT00246246 - RIS-BIP-301 - A Randomized, Open-label Trial of RISPERDAL® CONSTA™ Versus Oral Antipsychotic Care in Subjects With Bipolar Disorder
80. NCT00044681 - RIS-INT-93 - A Study to Evaluate the Efficacy, Safety and Maintenance Effect of Risperidone Augmentation of SSRI Monotherapy in Young and Older Adult Patients With Unipolar Treatment-Resistant Depression
81. NCT00249223 - RIS-INT-61 - Risperidone Depot (Microspheres) vs. Risperidone Tablets - a Non-inferiority, Efficacy Trial in Subjects With Schizophrenia
82. NCT01157351 - R092670SCH3006 - A Fifteen-month, Prospective, Randomized, Active-controlled, Open-label, Flexible Dose Study of Paliperidone Palmitate Compared With Oral Antipsychotic Treatment in Delaying Time to Treatment Failure in Adults With Schizophrenia Who Have Been Incarcerated
83. NCT01081769 - R092670SCH3005 - A 24-month, Prospective, Randomized, Active-Controlled, Open-Label, Rater-Blinded, Multicenter, International Study of the Prevention of Relapse Comparing Long-Acting Injectable Paliperidone Palmitate to Treatment as Usual With Oral Antipsychotic Monotherapy in Adults With Schizophrenia
84. NCT01281527 - R092670SCH3010 - A 6-month, Open Label, Prospective, Multicenter, International, Exploratory Study of a Transition to Flexibly Dosed Paliperidone Palmitate in Patients With Schizophrenia Previously Unsuccessfully Treated With Oral or Long-acting Injectable Antipsychotics
85. NCT01051531 - R092670SCH3009 - Safety, Tolerability, and Treatment Response of Paliperidone Palmitate in Subjects With Schizophrenia When Switching From Oral Antipsychotics
86. NCT01527305 - R092670SCH4009 - An Open-Label, Prospective, Non-Comparative Study to Evaluate the Efficacy and Safety of Paliperidone Palmitate in Subjects With Acute Schizophrenia
87. NCT01299389 - PALM-JPN-4 - A Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Fixed-Dose, Multicenter Study of JNS010 (Paliperidone Palmitate) in Patients With Schizophrenia
88. NCT01258920 - PALM-JPN-5 - A Long-Term, Open-Label Study of Flexibly Dosed Paliperidone Palmitate Long-Acting Intramuscular Injection in Japanese Patients With Schizophrenia
89. NCT00216671 - RISSCH4045 - Early Versus Late Initiation of Treatment With Risperdal Consta in Subjects With Schizophrenia After an Acute Episode
90. NCT00369239 - RISSCH4043 - Is Premorbid Functioning a Predictor of Outcome in Patients With Early Onset Psychosis Treated With Risperdal Consta?
91. NCT00216632 - RISSCH4026 - Treatment Success in Patients Requiring Treatment Change From Olanzapine to Risperidone Long Acting Injectable (TRESOR)
92. NCT00236379 - RIS-USA-275 - A Six-month, Double-blind, Randomized, International, Multicenter Trial to Evaluate the Glucoregulatory Effects of Risperidone and Olanzapine in Subjects With Schizophrenia or Schizoaffective Disorder
93. NCT00576732 - RISAUT4002 - Risperidone in the Treatment of Children and Adolescents With Autistic Disorder: A Double-Blind, Placebo-Controlled Study of Efficacy and Safety, Followed by an Open-Label Extension Study of Safety
94. NCT01050582 - RISNAP4022 - Evaluation of Growth, Sexual Maturation, and Prolactin-Related Adverse Events in the Pediatric Population Exposed to Atypical Antipsychotic Drugs
95. NCT00086112 - RIS-ANX-301 - A Double-blind, Randomized, Prospective Study to Evaluate Adjunctive Risperidone Versus Adjunctive Placebo in Generalized Anxiety Disorder Sub-optimally Responsive to Standard Psychotropic Therapy
96. NCT00216528 - RIS-KOR-66 - A Prospective, Open-Label Study to Evaluate Symptomatic Remission in Schizophrenia With Long Acting Risperidone Microspheres (Risperdal Consta)
97. NCT00269919 - RIS-KOR-64 - Effect on Efficacy, Safety and Quality of Life by Long-Term Treatment of Long-Acting Risperidone Microspheres in Patients With Schizophrenia
98. NCT00992407 - RISSCH4178 - A Randomized, Open-label, Active-controlled Study to Evaluate Social Functioning of Long Acting Injectable Risperidone and Oral Risperidone in the Treatment of Subjects With Schizophrenia or Schizoaffective Disorder
99. NCT00236353 - RIS-USA-305 - An Open-label Study of the Efficacy and Safety of RISPERDAL Long-acting Microspheres (RISPERDAL CONSTA) Administered Once Monthly in Adults With Schizophrenia or

Schizoaffective Disorder
100. NCT00495118 - RIS-INT-80 - Risperidone Depot (Microspheres) in the Treatment of Subjects With Schizophrenia or Schizoaffective Disorder - an Open-label Follow-up Trial of RIS-INT-62 and RIS-INT-85
101. NCT01855074 - RISSCH4186 - Evaluation of Efficacy and Safety of Risperidone in Long-acting Microspheres in Patients With Schizophrenia, Schizophreniform or Schizoaffective Disorders Diagnosed According to the DSM-IV Criteria, After Switching Treatment With Any Antipsychotic Therapy With Long-acting Microspheres of Risperidone
102. NCT00236457 - RIS-INT-62 - Randomized, Multi-center, Open Label Trial Comparing Risperidone Depot (Microspheres) and Olanzapine Tablets in Patients With Schizophrenia or Schizoaffective Disorder
103. NCT00236587 - RIS-USA-265 - An Open Label, Long Term Trial of Risperidone Long Acting Microspheres in the Treatment of Patients Diagnosed With Schizophrenia
104. NCT00297388 - RIS-SCH-401 - A 52-wk Prospective, Randomized, Double-blind, Multicenter Study of Relapse Following Transition From Oral Antipsychotic Medication to 2 Different Doses (25 or 50 mg Every 2 Wks) of Risperidone Long-acting Microspheres (RISPERDAL CONSTA) in Adults With Schizophrenia or Schizoaffective Disorder
105. NCT00821600 - RIS-SCH-1012 - Single-Dose, Open-Label Pilot Study to Explore the Pharmacokinetics, Safety and Tolerability of a Gluteal Intramuscular Injection of a 4-Week Long-Acting Injectable Formulation of Risperidone in Patients With Chronic Stable Schizophrenia
106. NCT00299702 - RISSCH4060 - A 2-year, Prospective, Blinded-rater, Open-label, Active-controlled, Multicenter, Randomized Study of Long-term Efficacy and Effectiveness Comparing Risperdal® Consta® and Abilify® (Aripiprazole) in Adults With Schizophrenia
107. NCT00526877 - RISSCH4119 (RISC-TWN-MA10) - Evaluation of Efficacy and Safety of Long-acting Risperidone Microspheres in Patients With Schizophrenia or Schizoaffective Disorders, Who is Receiving Psychiatric Home-care Treatment, When Switching From Typical Depot or Oral Antipsychotics to Long-acting Risperidone Microspheres
108. NCT00460512 - R076477SCH3017 - An Open-label Prospective Trial to Explore the Tolerability, Safety and Efficacy of Flexibly Dosed Paliperidone ER in Subjects With Schizophrenia
109. NCT00566631 - R076477SCH3018 - Tolerability, Safety and Treatment Response of Flexible Doses of Paliperidone ER in Acutely Exacerbated Subjects With Schizophrenia
110. NCT02417064 - ESKETINTRD3001 - A Randomized, Double-blind, Multicenter, Active-controlled Study to Evaluate the Efficacy, Safety, and Tolerability of Fixed Doses of Intranasal Esketamine Plus an Oral Antidepressant in Adult Subjects With Treatment-resistant Depression
111. NCT02418585 - ESKETINTRD3002 - A Randomized, Double-blind, Multicenter, Active-controlled Study to Evaluate the Efficacy, Safety, and Tolerability of Flexible Doses of Intranasal Esketamine Plus an Oral Antidepressant in Adult Subjects With Treatment-resistant Depression
112. NCT02422186 - ESKETINTRD3005 - A Randomized, Double-blind, Multicenter, Active-controlled Study to Evaluate the Efficacy, Safety, and Tolerability of Intranasal Esketamine Plus an Oral Antidepressant in Elderly Subjects With Treatment-resistant Depression
113. NCT02497287 - ESKETINTRD3004 - An Open-label, Long-term, Safety and Efficacy Study of Intranasal Esketamine in Treatment-resistant Depression
114. NCT02493868 - ESKETINTRD3003 - A Randomized, Double-blind, Multicenter, Active-Controlled Study of Intranasal Esketamine Plus an Oral Antidepressant for Relapse Prevention in Treatment-resistant Depression
115. NCT01998958 - ESKETINTRD2003 - A Double-Blind, Doubly-Randomized, Placebo-Controlled Study of Intranasal Esketamine in an Adaptive Treatment Protocol to Assess Safety and Efficacy in Treatment-Resistant Depression (SYNAPSE)
116. NCT02133001 - ESKETINSUI2001 - A Double-blind, Randomized, Placebo Controlled Study to Evaluate the Efficacy and Safety of Intranasal Esketamine for the Rapid Reduction of the Symptoms of Major Depressive Disorder, Including Suicidal Ideation, in Subjects Who Are Assessed to be at Imminent Risk for Suicide
117. NCT03039192 - 54135419SUI3001 - A Double-blind, Randomized, Placebo-controlled Study to Evaluate the Efficacy and Safety of Intranasal Esketamine in Addition to Comprehensive Standard of Care for the Rapid Reduction of the Symptoms of Major Depressive Disorder, Including Suicidal Ideation, in Adult Subjects Assessed to be at Imminent Risk for Suicide
118. NCT03097133 - 54135419SUI3002 - A Double-blind, Randomized, Placebo-controlled Study to Evaluate the Efficacy and Safety of Intranasal Esketamine in Addition to Comprehensive Standard of Care for the Rapid Reduction of the Symptoms of Major Depressive Disorder, Including Suicidal Ideation, in Adult Subjects Assessed to be at Imminent Risk for Suicide
119. NCT02918318 - 54135419TRD2005 - A Randomized, Double-blind, Multicenter, Placebo-controlled Study

to Evaluate the Efficacy, Safety and Tolerability of Fixed Doses of Intranasal Esketamine in Japanese Subjects With Treatment Resistant Depression
120. NCT00095134 - RIS-DEP-401 - A Double-Blind Study Comparing Adjunctive Risperidone Versus Placebo in Major Depressive Disorder That Is Not Responding to Standard Therapy
121. NCT01627782 - KETIVTRD2002 - A Double-blind, Randomized, Placebo-controlled, Parallel Group, Dose Frequency Study of Ketamine in Subjects With Treatment-resistant Depression
122. NCT01640080 - ESKETIVTRD2001 - A Double-Blind, Double-Randomization, Placebo-Controlled Study of the Efficacy of Intravenous Esketamine in Adult Subjects With Treatment-Resistant Depression

What type of data are you looking for?: Individual Participant-Level Data, which includes Full CSR and all supporting documentation

Research Proposal

Project Title

Machine Learning for predicting treatment efficacy and clinical categorizations across mental health disorders.

Narrative Summary:

We will use Machine Learning (ML)to predict the effectiveness of common drugs used in the treatment of several mental disorders such as Schizophrenia and Major Depressive Disorder. Additionally, we will examine similarities between patient profiles to identify symptom clusters across disorders. This project has the potential to materially enhance our scientific knowledge of treatment accuracy and the categorization of mental disorders. Regarding public health, prospective identification of treatment accuracy and applicability can lead to optimal (precise, efficient, and individually-tailored) treatment plans for each patient, enhancing wellbeing.

Scientific Abstract:

Background: Finding effective treatment methods for mental disorders is crucial to enhance quality of life. Precision Medicine, a method with momentous potential, involves developing personalized plans for each patient for effective treatments. Additionally, many disorders share common symptoms, making it necessary to explore symptom clusters both within and across diagnosis groups.
Objective: To build a Machine Learning (ML) model that can predict the effectiveness of common treatments across mental disorders using individual patient data; to categorize patients into symptom-clustering groups and discover similarities between disorders.
Study Design: We will train our model on clinical data to predict treatment efficacy for each drug and cross-validate it to assess how the model generalizes to an independent dataset. Using another model, we will analyze datasets across conditions to identify symptom-clustering groups.
Participants: Patients with psychotic, mood, anxiety, or disruptive behaviour disorders, epilepsy, autistic disorder, or ADHD.
Main Outcome Measure: For our predictive model, the outcome measure will be the sensitivity, specificity and predictive power relative to each specific drug; in our symptom-clustering analysis, we will test whether clusters are stable, and how treatment responsiveness differs among clusters.
Statistical Analysis: The relationship between clinical data and treatment outcomes will be examined using ML regression analysis. Clusters of similar symptom profiles will be identified with pattern recognition techniques.

Brief Project Background and Statement of Project Significance:

Mental disorders significantly harm a person's quality of life because they can lead to detrimental physiological and psychological states. Therefore, finding efficient treatments is paramount to improving mental health. An approach with significant potential is Precision Medicine (Lu, Fizbein & Opfer, 1987), which involves creating individualized medical plans for each patient with pertinent drugs identified at an early stage. Currently, identifying the most appropriate treatment for a patient often involves a costly process of trial and error (costly in terms of time, money and health); individualized treatment plans offer a potential solution that would greatly improve this process. Recent research, such as the study by Chekroud et al (2016), shows that statistical models constructed from clinical data

can enable the prediction of a patient's drug response. In this project, we will use clinical data to build a Machine Learning model to predict the effectiveness (e.g. improvement of symptoms as measured with clinical assessments, time until relapse or incidence of adverse events) of various treatments for individual patients, which could provide a promising method for future personalized treatment plans.
Many mental disorders share similar symptoms. For example, Major Depressive Disorder and Generalized Anxiety Disorder both involve restlessness and a lack of concentration (Zbozinek et al, 2012). It is important to analyze symptom clusters that may have previously been thought of as belonging to distinct disorders in order to develop wide-ranging treatments. A paper by Chekroud et al (2017), demonstrated that the researchers were able to cluster empirically defined symptoms into groups with different responsiveness to treatments, both within and across antidepressant medications. In our project, we will create a ML model to categorize patients into symptom-clustering groups and both within and across disorders. Our investigation into similarities between disorders will contribute to discovering potential connections between mental illnesses.

This project will materially enhance our scientific knowledge of treatment efficacy and different outcomes across the treatment and placebo groups for specific medications (such as Risperidone, Paliperidone, or Topiramate). It will also provide more information about symptom clusters across the disorders that these medications are prescribed for. In terms of this project's relevance to public health, it will contribute to the growing efficiency, personalization, and precision of treatment applications and the potential use of treatments for multiple disorders. We recognize that this project is ambitious, nevertheless, collecting data about several mental disorders can allow us to evaluate the use of ML techniques for finding novel clusters, which could potentially alter their categorization in the future. Therefore, this project acts as a proof-of-concept pilot study.

Specific Aims of the Project:

The first aim of this project is to construct least absolute shrinkage and selection operator (LASSO) regression models from individual patient clinical data. These models will provide identification of patients who will or will not respond positively based on clinical measures (such as YMRS in Bipolar Disorder (Young et al, 1978) and PANSS in Schizophrenia (Kay, Fizbein & Opfer, 1987)) to specific treatments for multiple mental disorders as compared to placebo.

The second aim of this project is to build a k-nearest neighbour (KNN) ML model that clusters symptoms across all mental disorders which will be visualised using t-Distributed Stochastic Neighbour Embedding (t-SNE) in order to identify possible novel associations across clinical categories.

We hypothesize that our models will reliably predict treatment outcomes and that in investigating symptom-clustering groups we will discover novel similarities across clinical classifications.

What is the purpose of the analysis being proposed? Please select all that apply.
New research question to examine treatment effectiveness on secondary endpoints and/or within subgroup populations
Participant-level data meta-analysis
Participant-level data meta-analysis using only data from YODA Project
Research on comparison group
Research on clinical prediction or risk prediction

Research Methods

Data Source and Inclusion/Exclusion Criteria to be used to define the patient sample for your study:

Data Source: All available digital data (clinical, biochemical, cognitive, sociodemographic, etc.) from phase 3 and 4 randomized and/or open-label datasets for Schizophrenia, Schizoaffective Disorder, Psychosis, Bipolar Disorder, Major Depressive Disorder, Attention Deficit Hyperactivity Disorder, Disruptive Behaviour Disorders, Anxiety Disorders, Autistic Spectrum Disorder, and Epilepsy (as a reference).

Exclusion Criteria: In order to develop an ML model with strong predictive power, the model must be trained on a large dataset; the more variance captured in the clinical data, the more accurate our models will be at predicting the treatment effectiveness of unseen patients. We will, for this reason, include all patients in our study.

Main Outcome Measure and how it will be categorized/defined for your study:

We will measure the sensitivity, specificity and predictive power of our ML models in predicting treatment effectiveness, relative to each specific drug through a cross-validation method (described below in the Statistical Analysis section). Our measure of treatment effectiveness will depend on the primary endpoints of the trials, with examples including:

• Time until remission (days)
• Change from baseline (using a clinically relevant measure such as PANSS (Kay, Fizbein & Opfer, 1987), or YMRS (Young et al, 1978))
• Survival (yes/no)
• High vs. low quality of life scores (such as the Short Form-36 (Ware & Sherbourne, 1992) or WHOQOL-BREF (Skevington, Lofty, & O'Connel, 2004))

Main Predictor/Independent Variable and how it will be categorized/defined for your study:

For each of our ML models, our main independent variable will be treatment allocation and will be defined as a binary dummy variable.

Our predictor variables of interest are all digitally archived information, which includes patient profile characteristics such as variables of the demographic, clinical, cognitive, genetic, lab-test, and free-text survey information, as well as the characteristics of the trials, such as when and where the trial was performed, the number of subjects and the intervention used. The more moderating variables available in our data, the better our model will be able to make personalized predictions. The following list just provides a few potential example predictor variables that could be included in our analysis:

• Age (years)
• Sex (male/female/intersex)
• Race (Caucasian, African American, etc.)
• BMI (continuous)
• Smoker (yes/no)
• Time since diagnosis (years)
• Previous treatments (yes/no, name, dose)
• Additional Diseases / Comorbidities (yes/no, name)
• Measures of psychopathology (for example, YMRS)
• Relapse occurrence/time to relapse (yes/no, days)

Other Variables of Interest that will be used in your analysis and how they will be categorized/defined for your study:

All digitally archived variables.

Statistical Analysis Plan:

• A descriptive analysis of all demographic, clinical, and pharmaceutical characteristics of participants. ANOVA and chi-square tests will be conducted to determine whether the distribution of continuous and categorical factors, respectively, are distributed equally among patients. Results will be displayed as the median and interquartile range (IQR) for continuous variables and as number and percentage frequency for categorical variables.

Aim One:
• All ML models will be developed and appraised with k-fold cross-validation (Pedregosa et al, 2011), partitioning the entirety of the relevant constructed dataset into k disjoint subsets, with the model trained on k-1 of the subsets and the model's predictive power tested on the remaining subset.
• The least absolute shrinkage and selection operator (LASSO) regression analysis method will be performed to determine the relationship between patient profile and treatment outcome. LASSO regression can obtain the subset of predictors that minimizes prediction error for a quantitative response variable, which, for our project, will be the measure of the treatment outcome relative to each disorder (e.g. time until remission) (Santosa & Symes, 1986).

Aim Two:
• A descriptive analysis of all demographic, clinical, and pharmaceutical characteristics of participants will be undertaken, with ANOVA and chi-square tests conducted to determine whether the distribution of continuous and categorical factors, respectively, are distributed equally among patients. Results will be displayed as the median and interquartile range (IQR) for continuous variables and as number and percentage frequency for categorical variables.
• k-nearest neighbours algorithm (KNN) will be used to cluster patient profiles across all conditions of interest to discover previously unidentified symptom-clustering across mental disorders. KNN is a non-parametric pattern recognition method that can assign each patient profile to a particular cluster or group based on similarities across all patients and mental disorders (Altman, 1992).
• t-Distributed Stochastic Neighbour Embedding (t-SNE), an ML algorithm for dimensionality reduction, will be used to visualize the symptom-clustering groups in a low-dimensional space (van der Maaten & Hinton, 2008).
Software Used:
RStudio

Project Timeline:

Project start date: August 2019
Initial Analysis completion date: May 2020
Manuscript Drafted: June 2020
Manuscript submitted for publication: July 2020
Report back to YODA: August 2020

Dissemination Plan:

We anticipate the generation of at least two manuscripts from this project on our models' ability to predict treatment outcomes and recluster patient profiles. The target audience would be physicians as well as psychiatry and pharmacology researchers. Potentially suitable journals for these manuscripts include Neuropsychopharmacology, Journal of Psychiatric Research, The Canadian Journal of Psychiatry, JAMA Psychiatry, Journal of Machine Learning Research and Artificial Intelligence in Medicine.

Bibliography:

Altman, N. (1992). An introduction to kernel and nearest-neighbor nonparametric regression. The American Statistician. 46(3), pp. 175 – 185. doi:10.1080/00031305.1992.10475879. hdl:1813/31637

Chekroud, A., Gueorguieva, R., Krumholz, H., Trivedi, M., Krystal, J., & McCarthy, G. (2017). Reevaluating the efficacy and predictability of antidepressant treatments: A system Clustering Approach. JAMA Psychiatry 74(4), pp. 370-378. doi:10.1001/jamapsychiatry.2017.0025

Chekroud, A., Zotti, R., Shehzad, Z., Gueorguieva, R., Johnson, M., Trivedi, M., . . . Corlett, P. (2016). Cross-trial prediction of treatment outcome in depression: a machine learning approach. Lancet Psychiatry 3, pp. 243-250. doi: https://doi.org/10.1016/S2215-0366(15)00471-X

Kay, S., Fizbein, A., & Opfer, L. (1987). The Positive and Negative Syndrome Scale (PANSS) for Schizophrenia. Schizophrenia Bulletin, 13(2), 261-276. Retrieved from http://dx.doi.org/10.1093/schbul/13.2.261

Lu, Y., Goldstein, D., Angrist, M., & Cavalleri, G. (2014). Personalized Medicine and Human Genetic Diversity. Cold Spring Harbor Perspectives in Medicine, 4(9). doi:10.1101/cshperspect.a008581

Pedregosa, F., Varoquaux, G., Gramfort, A., Michel, V., Thirion, B., Grisel, O., Blondel, M., Prettenhofer, P., Weiss, R., Dubourg, O., Vanderplas, J., Passos, A., Cournapeau, D., Brucher, M., Perrot, M., & Duchesnay, E. (2011). Scikit-learn: Machine learning in Python. JMLR, 12, pp. 2825-2830. Retrieved from http://jmlr.csail.mit.edu/papers/v12/pedregosa11a.html

Santosa, F., & Symes, W. (1986). Linear inversion of band-limited reflection seismograms. SIAM Journal on Scientific and Statistical Computing. 7(4), pp. 1307–1330. doi:10.1137/0907087

Skevington, S., Lofty, M., & O'Connell, K. (2004). The World Health Organization's WHOQOL-BREF quality of life assessment: Psychometric properties and results of the international field trial. Quality of Life Research, 13, pp.

299-310. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.463.2578&rep=re...

van der Maaten, L., & Hinton, G. (2008). Visualizing Data Using t-SNE. Journal of Machine Learning Research. 9, pp. 2579–2605. Retrieved from http://jmlr.org/papers/volume9/vandermaaten08a/vandermaaten08a.pdf

Ware, J., & Sherbourne, C. (1992). The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. Medical Care, 30(6), pp. 473-483. Retrieved from https://pdfs.semanticscholar.org/06cb/0076e310136d0ca8b56cc8585ec2bf43e0...

Young, R., Biggs, J., Ziegler, V., & Meyer, D. (1978). A rating scale for mania: reliability, validity and sensitivity. British Journal of Psychiatry. 133(5), pp. 429-35. doi:10.1192/bjp.133.5.429

Zbozinek, T., Rose, R., Wolitzky-Taylor, K., Sherbourne, C., Sullivan, G., Stein, M., Roy-Burne, P., & Craske, M. (2012). Diagnostic overlap of generalized anxiety disorder in a primary care sample. Depression & Anxiety, 29(12), 1065-1071. doi:1002/da.22026

Supplementary Material:

https://yoda.yale.edu/sites/default/files/yoda_protocol_amendment_20210609.docx