Diagnosing and Treating Children with Mood Disorders: Pragmatic Solutions to Real World Challenges

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## Disclosures of Potential Conflicts

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<tr>
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<td>Stanford University Child Health Research Program</td>
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Overview

- Mood disorders commonly begin in childhood.
- Early signs of problems with mood reflect a change in brain function.
- Treatment may prevent, reverse, or worsen the natural course of mood problems before reaching adulthood.
Why this is important:

- Pediatric mood disorders are common and can have serious developmental consequences.

- We need to distinguish problem behaviors from behaviors typical of children to enhance our understanding of what needs treatment.

- Mood disorders can run in families.

- Diagnosing mood problems is challenging as there are no lab tests.

- Knowing risk factors and warning signs aids early identification and treatment.
Case Review: Life of a “Moody” Child

Childhood
- Some stable premorbid factors influencing brain development:
  - Genetics
  - Temperament
  - Parenting
  - Attachment

Vulnerabilities
- In brain regions involved in emotion and motivation

Adolescence
- Intact Emotional Function
- Prevention Strategy?
- Dysregulated emotion and motivation

Transition to Adulthood
- Resilience: Intact adaptive functions

Risk:
- Mood/psychiatric other adverse outcomes (diabetes, heart disease)
Diagnostic Challenge: Who has a mood disorder? Who will develop a mood disorder?

Family history is among the clearest risk factors.
Some Children at High-risk for Mood Problems Show Brain Patterns of Resilience

Increased connections between the Ventrolateral Prefrontal Cortex (VLPFC) and the brain network that controls executive functions.

Davidovich et al., *J Affective Disorders*, 2016; 199:54-64.
Phillips et al., Is a Highly Dimorphic Brain Vulnerable to Psychopathology? Insights from Brain Imaging, Genetics, and Psychiatry, In Preparation
Promoting Resilience

- Know your symptoms and triggers
- Maintain a healthy diet, physical exercise, and regular sleep
- Train your brain through mindfulness
- Have plan to manage stress
- Combine medication(s) with psychotherapy (whatmeds.stanford.edu)

Shomaker et al., A Randomized Controlled Trial to Prevent Depression and Ameliorate Insulin Resistance in Adolescent Girls at Risk for Type 2 Diabetes. *Ann Behav Med.* 2016.
Some Children at High-risk for Mood Problems Show Brain Patterns of Vulnerability

Family Chaos is Associated with Disconnectivity in the Brain

Singh et al., Bipolar Disorders, 2014;16(7):678-689.
Family-Focused Treatment (FFT)

- 12 sessions over 4 months
- Begins with assessment of family
- Three component modules:
  - **Psychoeducation** *(symptoms, early recognition, understanding causes, treatment, and self-management)*
  - **Communication skills training** *(behavioral rehearsal of effective speaking and listening strategies)*
  - **Problem solving skills training**

Family intervention speeds up recovery from mood episodes in youth at risk for Bipolar Disorder

Cumulative Proportion Not Recovered

Time to Recovery from Symptoms at Entry, weeks

High EE, HR = 4.59, p = .014
Low EE, HR = 1.46; p = .11

P = .047; Hazard ratio, 2.69

EC=Educational control
FFT=family-focused therapy

Family Therapy Improves Mood and Prefrontal Cortex Function

### Table 6. After-intervention parent feedback

<table>
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<tr>
<th>Question</th>
<th>Response</th>
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<tr>
<td>Most notable changes in children after intervention</td>
<td>‘My son is controlling anger and emotions more.’&lt;br&gt;‘(My daughter has) more patience’</td>
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<td>Most helpful aspect of the programme</td>
<td>‘She (my daughter) enjoys talking with other girls who go through the same thing.’&lt;br&gt;‘Showing the children the difference between judgments and facts and making them understand it.’&lt;br&gt;‘Teaching him (my son) how to relax.’</td>
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<td>Most important thing their child took from the programme</td>
<td>‘A different aspect on things; she (my daughter) is a little more easy-going and patient.’&lt;br&gt;‘Trying to remember to learn to breathe when you’re upset.’</td>
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Treatment Challenge: Few Approved Agents for Acute and Long-Term Treatment of Pediatric Depression

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<tr>
<th>Acute Depression</th>
<th>Year</th>
<th>Drug</th>
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<tr>
<td></td>
<td>2002</td>
<td>Fluoxetine (7-17 years)</td>
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<td></td>
<td>2009</td>
<td>Escitalopram (12-19 years)</td>
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<tr>
<th>Longer-Term Need</th>
<th>Year</th>
<th>Drug</th>
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Unmet Need

Unmet Need
Treatment Challenge: Few Approved Agents for Acute and Long-Term Treatment of Pediatric Bipolar Disorder

**Acute Mania**

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<tr>
<th>Year</th>
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<tr>
<td>1970</td>
<td>Lithium&lt;sup&gt;a&lt;/sup&gt;</td>
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<tr>
<td>2007</td>
<td>Risperidone&lt;sup&gt;b&lt;/sup&gt;</td>
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<tr>
<td>2008</td>
<td>Aripiprazole&lt;sup&gt;b,(-&gt;e)&lt;/sup&gt;</td>
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<tr>
<td>2009</td>
<td>Quetiapine&lt;sup&gt;b&lt;/sup&gt;</td>
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<tr>
<td>2009</td>
<td>Olanzapine&lt;sup&gt;c&lt;/sup&gt;</td>
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**Acute Depression**

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<tr>
<th>Year</th>
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<tbody>
<tr>
<td>2014</td>
<td>OlanzapineFluoxetine&lt;sup&gt;b&lt;/sup&gt;</td>
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**Longer-Term**

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<tr>
<th>Year</th>
<th>Drug</th>
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<tr>
<td>1974</td>
<td>Lithium&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>2008</td>
<td>Aripiprazole&lt;sup&gt;(b-&gt;e)&lt;/sup&gt;</td>
</tr>
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*Adjunctive (and monotherapy); 
<sup>a</sup>Age ≥ 12-17; 
<sup>b</sup>Age 10-17; 
<sup>c</sup>Age 13-17; 
(->e)Extrapolated indication

Treatment Challenge: How Should We Treat Depressed Youth Who are at High-Risk for Bipolar?

Well…definitely therapy first if possible…then…

- SSRI?
- Bupropion?
- Lamotrigine?
- Lithium?
- Quetiapine?


Schneck et al., A Pharmacologic Algorithm for Youth Who Are At High Risk for Bipolar Disorder, In Review.
Conclusions

• Be aware of warning signs of mood problems in kids.

• Evaluating children early in development and over time will increase our understanding of the causes and long-term effects of mood problems.

• Effective therapies are currently available.

• New therapies and the safety of medications are being studied.
Thank you!

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Elizabeth Weisman, BA
Pia Ghosh, BA
Alexis Staver, MA
Laila Soudi, MA
Sara Leslie, BA
Danielle Balzafiore, MA
Anne Cuniffe Marcy, MSBH
Alexander Onopa, MS
Owen Phillips, PhD

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Booil Jo, PhD – Stanford Psychiatry
Terence Ketter, MD – Stanford Psychiatry
Kiki Chang, MD – Stanford Child Psychiatry
Amy Garrett, PhD – Stanford CIBSR
Lara Foland-Ross, PhD - Stanford CIBSR
Mira Raman, MA - Stanford CIBSR
Allan Reiss, MD – Stanford CIBSR
Gary Glover, PhD – Stanford Lucas Center
David Miklowitz, PhD – UCLA
Melissa DelBello, MD – University of Cincinnati

Funding Sources
National Institute of Mental Health
Office of Research in Women’s Health
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Akiko Yamazaki and Jerry Yang

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