Medication Approaches for Emotional and Behavioral Challenges in Autism

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LEARNING OBJECTIVES

1. Learn the role of medications in autism – what are they good for and what are they not.
2. Identify co-occurring mental health disorders.
3. See the evidence for medication.

DISCLOSURES

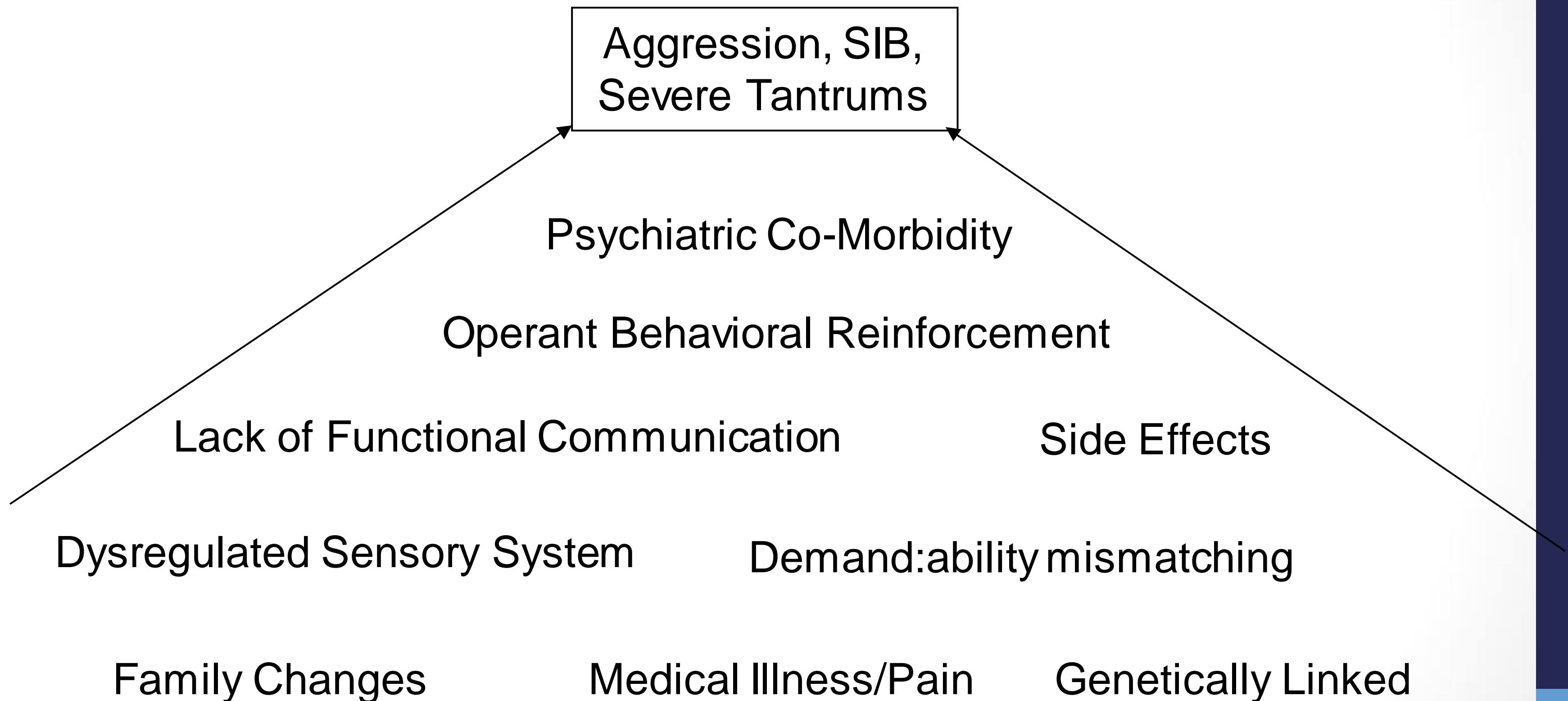
Source	Employee	Research Funding
Boston Children's Hospital	X	
NIMH NICHD Autism Speaks Simons Foundation NLM Family Foundation Impel Neuropharma		X

AN EXAMPLE

14 year old boy with autism, minimally verbal, began hitting himself in cheek two months ago after moving to a new school. Increasing in intensity. Occurs more often around transitions and with school demands. Started Keppra 2 months ago after single seizure, and he became an older brother recently.

- Psychiatric co-occurring disorder: Anxiety disorder (transitions)?
- Behavioral function & reinforcement: Obtain social attention or internal stimuli (pain)?
- Communication: Visual communication system (PECS) not being used in new school setting or with transitions?
- Side effects: Keppra?
- Sensory dysregulation: Seeking pressure?
- Demand: ability match: Work in new classroom too hard/easy?
- Family changes: New baby at home?
- Medical: Tooth abscess?

Irritability is a Common Pathway Symptom



AUTISM COMORBIDITY INTERVIEW

Prevalence

Anxiety Disorders ADHD
Specific Phobia 44% 31%
OCD Depressive Disorder 13%
37% ODD
Separation anx. d/o 12% 7%
Social phobia 7% Bipolar Disorder
Generalized anxiety 2% 2.4%
Psychotic Disorder 0%

- 109 children, at least some spoken language. Modified the K-SADS to account for symptoms typical of ASD (Leyfer, 2006)

ANXIETY: TEMPLE GRANDIN, PHD

“When puberty hit, that's when the anxiety attacks and the panic attacks started. I was a type of person with autism where once there was puberty, non-stop panic attacks. I mean, imagine how you felt when you did your first really big, important, you know, interview, how nervous you were. Now, imagine if that's the way you felt all the time, all the time.”

DIAGNOSING PSYCHIATRIC CO-OCCURRING DISORDERS IN ASD

Questions:

- Typical of autism ?
- Appropriate to developmental level ?
- Serve an adaptive function ?
- Modeled/reinforced in environment ?

MEDICATIONS AND AUTISM

- No medications that address the core features of ASD

- Medications are used for:
  - Psychiatric co-occurring disorders
  - Target behavioral symptoms (Irritability)

- All medications discussed are off-label use, except for risperidone and aripiprazole for irritability in ASD, 5-17 years old.

COMMON MEDICATION TARGETS

Co-occurring Psychiatric Disorders:

- Anxiety
- OCD
- ADHD – Inattention/Hyperactivity
- Mood Disorder – Depression, Bipolar D/O
- Sleep Disorders
- Catatonia

Behavioral Symptoms:

- Aggression
- Self-injurious behavior (SIB)
- Severe Tantrums (emotion dysregulation)
- High Arousal State / Traumatization

EVIDENCE IN AUTISM

- Stimulants
  - Methylphenidate (Ritalin) – 1 Large Positive RCT
- Alpha 2 Agonists
  - Guanfacine (Tenex, Intuniv) – 1 Large positive RCT and 2 small positive
- SNRIs
  - Atomoxetine (stratera) – 2 Large positive RCTs
- SSRIs (Fluoxetine (Prozac), Escitalopram (lexapro), Sertraline (Zoloft)
  - No studies for anxiety or depression. 1 large negative RCT for repetitive behavior
- Tri-Cyclic Antidepressants
  - Clomipramine (Anafranil) – 1 small negative RCT, 1 small positive for repetitive behavior
- Mood Stabilizers
  - Lithium, Valproic Acid (Depakote), Lamictal – Mixed results for Depakote.
- Antipsychotics
  - Risperidone, Aripiprazole (Abilify) & Haldol – Multiple positive RCTs
- Sleep agents
  - Melatonin – 2 large positive RCTs

APPROACHES TO AVOID

DUE TO EVIDENCE OF HARM AND/OR NO EFFECT IN ASD

- Chelation:
  No scientific evidence for benefit and at least 2 deaths of children with ASD have been documented.

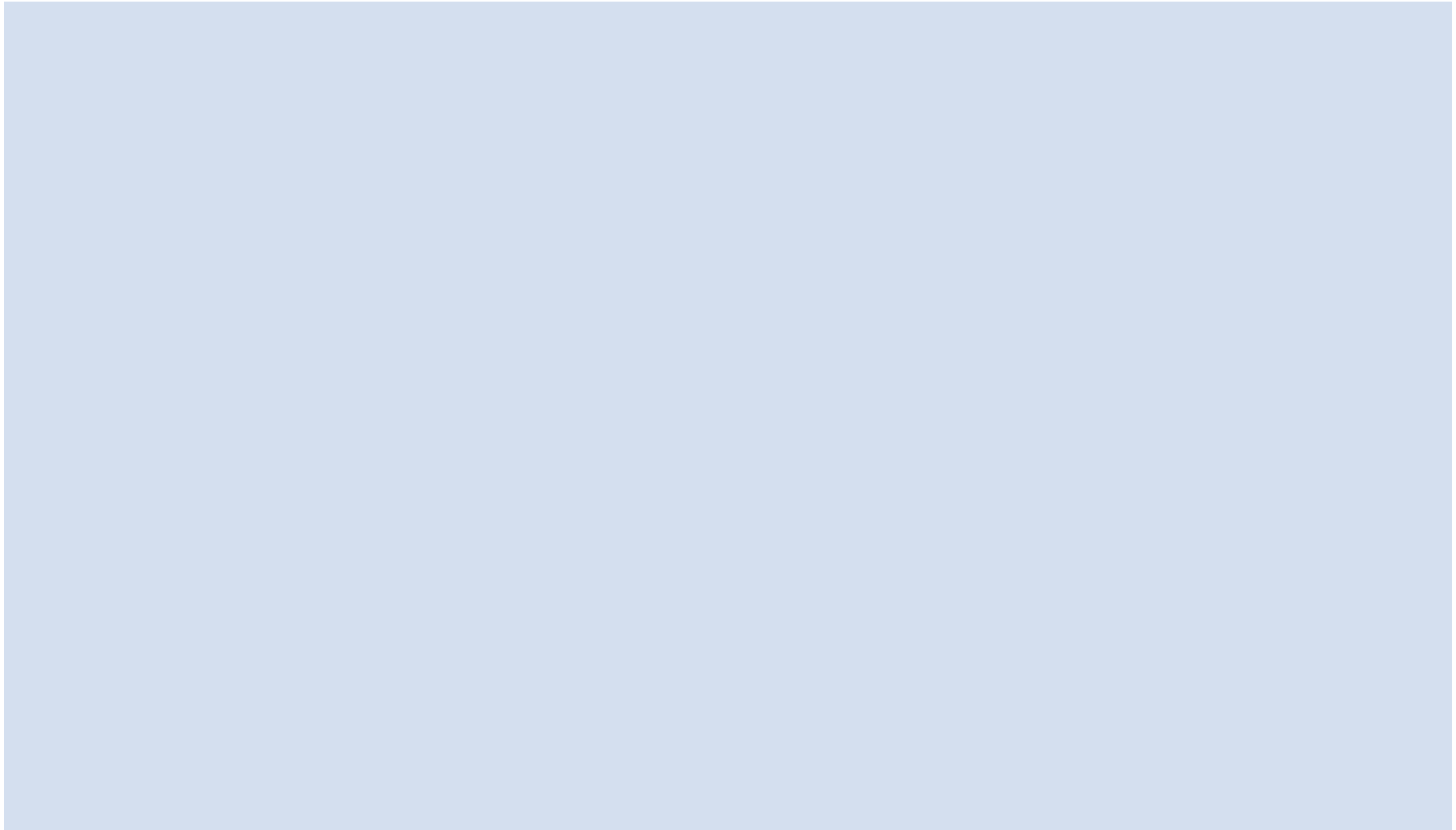
- Secretin: Numerous scientific studies showing no benefit in any form.

- Stem cell procedures: No scientific evidence of benefit and substantial risks.

- Hyperbaric Oxygen Treatment (HBOT): Lack of scientific evidence of benefit in autism.

- Gluten-free/Casein-free diet: 6 randomized controlled trials showing no effect on behavior in children with ASD.
  (Piwowarczyk, A, Gluten- and casein-free diet and autism spectrum disorders in children: a systematic review. Eur J Nutr. 2017 Jun 13)

IN PRACTICE
(MY APPLICATION OF THE EVIDENCE BASE)



ANXIETY

- CBT for those who have capacity
- Strong evidence in non-ASD kids:
  - Sertraline
  - Escitalopram
  - Fluoxetine
  - Intuniv (guanfacine xr)

Buspirone

Venlafaxine

ADHD

- Methylphenidate
- Mixed amphetamine salts (Adderall, Vyvanse)
- Guanfacine / clonidine
- Atomoxetine (inattention)

Amantadine

Atypical Anti-psychotics

DEPRESSION

- Psychotherapy for those with capacity
- Strong evidence in non-ASD kids:
  - Sertraline
  - Escitalopram
  - Fluoxetine

- Venlafaxine
- Buproprion

INSOMNIA

- Sleep hygiene
- Resolve enuresis
- Melatonin 3mg

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- Clonidine
- Mirtazapine
- Trazodone (resistant, or middle of night awakenings)

MOOD DISORDER / MANIA

- Depakote
- Lithium

- Lamotrigine

REPETITIVE BEHAVIOR (IF AN IMPAIRING PROBLEM)

- Risperidone
- Aripiprazole

SERIOUS BEHAVIORS (AGGRESSION, SIB, SEVERE TANTRUMS)

- Guanfacine / Guanfacine XR
- Risperidone
- Aripiprazole
- Haloperidol

Summary

- The evidence base for psychotropic medication in autism is limited.
- Many children with ASD either do not need or will not benefit from available psychotropic medications.
- A cautious, targeted approach, informed by the evidence base, to treat impairing co-occurring disorders, or targeting behavioral symptoms, can be beneficial.
- Potential side effects, polypharmacy and overreliance on the "magic pill" to the exclusion of other approaches are all risks of medication treatment. These have to be weighed against the risks of not treating.

RESOURCES

- McGuire K, et al, Pathway for Assessment and Treatment of Irritability in ASD, Pediatrics, 2015
- Siegel M, Psychopharmacology of Autism Spectrum Disorder, Child Psych Clinics, 2013
- McPheeters M, Systematic Review of Medical Treatments in ASD, Pediatrics, 2011

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