Pills + Skills = Success

Rational Brain-based Psychopharmacology for Children & Adolescents with FASD & Traumatic Stress: MOA Fall Conference 2018

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The Role of Psychotropic Medication in the Treatment of Complex Kids

- So many misconceptions
- Primary Care is overwhelmed!
- Insufficient child psychiatry support
- Widespread use in child welfare system
- ***Overprescribing*** in foster care
- One size fits none: Limits of DSM 5 here
- Paucity of ***translational research***
- There has to be a better way!

Everyone is critical of psychotropic medication treatment in foster care...

...Until the
placement is threatened
by severe behaviors...

The Role of Psychotropic Medication in the Treatment of Complex Kids

Medication Myths in Our World:

- "Meds don't work in FASD"
- "Traumatized kids don't / can't have ADHD"
- "You can't treat kids younger than 5"
- "Meds should always be the last resort"

The Role of Psychotropic Medication in the Treatment of Complex Kids

My 36-year medication journey:

- ADHD expert (thousands of kids evaluated & treated) gets frustrated
- ADHD comorbidities emerge...back to "school"
- WMU CTAC medication *reality check*...repeated failures drive change to new conceptual model

The Role of Psychotropic Medication in the Treatment of Complex Kids

My 36-year medication journey:

- Time to regroup!...Steven Stahl, MD inspires
- Our *brain-based* conceptual model takes shape
- Where do meds belong in Tx of complex kids?
- Primary care challenge: ***You must do more!***

The Role of Psychotropic Medication in the Treatment of Complex Kids

My 36-year medication journey:

- ***Optimized regulation:*** early Tx target
- Are there *physiologic alternatives* to med Tx?
- *Optimized meds* → improved efficiency / effectiveness of other treatment modalities
- Medical triage PC model based on trauma / FASD screening and assessment taking shape
- Community Translational Research Network to better measure medication Tx outcomes

The Role of Psychotropic Medication in the Treatment of Complex Kids

Training & Consultation in ***Primary Care*** :

- Walk before you run...need for *systematic office approach* to complex behavioral problems
- Need for trauma / FASD ***screening***
- Integrated PC trauma / FASD ***assessments***
- ***Rating scales*** to address target symptoms
- Brain-based conceptual model: learning curve realities
  - ***The cavalry ain't coming, dude!***

Psychotropic Medication Treatment in FASD / Traumatized Children & Adolescents

Medication Treatment of Traumatized / FASD Kids

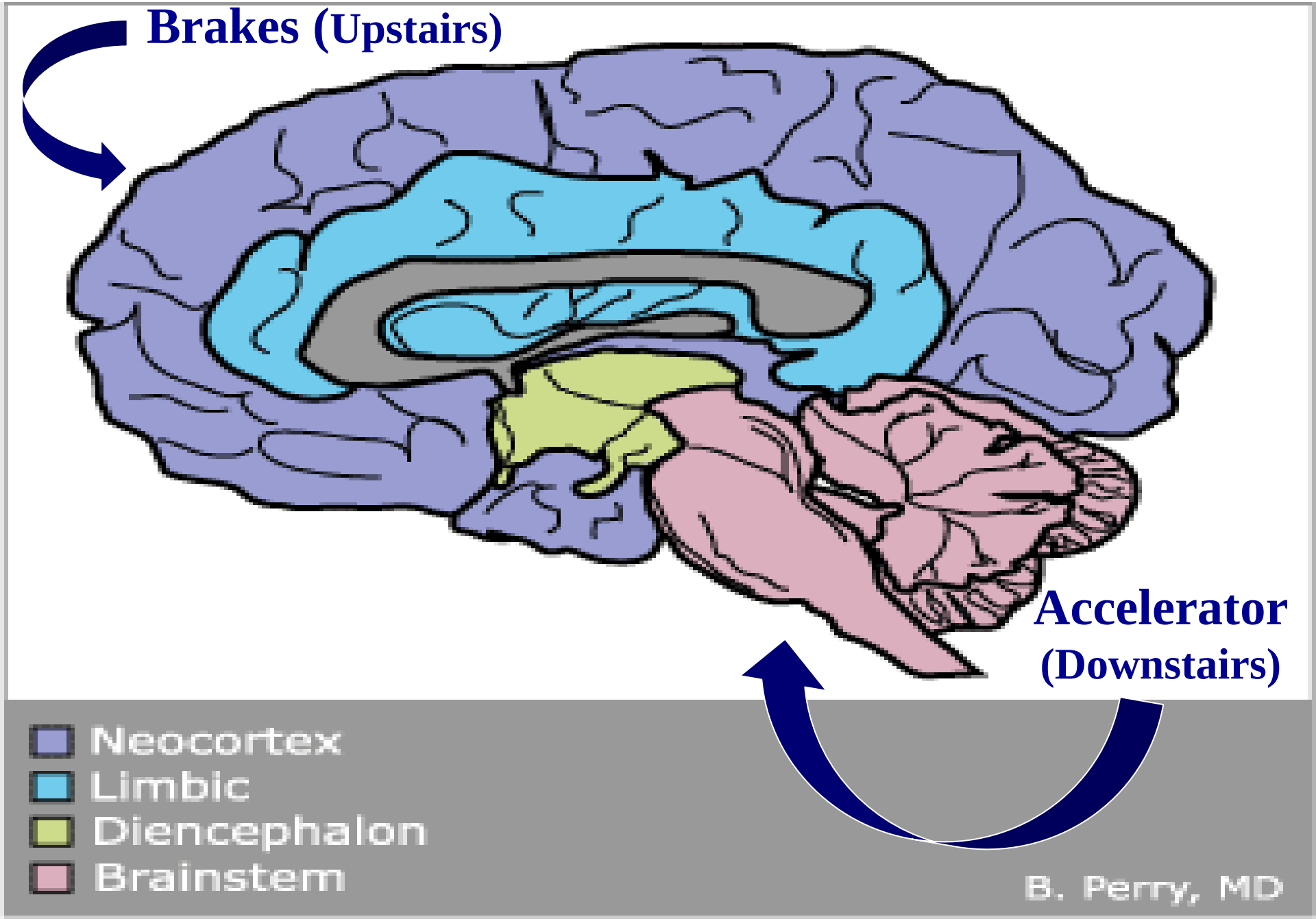
- Early medication use can be effective / essential / foster placement-preserving
- Medication impact on ***regulatory function*** is critical (especially in young kids)➔
- Other physiologic tx (Music Tx / Occupational Tx) as first step➔➔ Kellogg Foundation grant
- Optimal regulatory function often allows other treatments (trauma therapy) to be more effective

Delicate Balance of Behavioral Regulation:
Coarse control of brain energy / behavior

Top-Down *"Brakes"* (Prefrontal Cortex)

Bottom-Up *"Accelerator"* (Brainstem/Limbic System)

The Human Brain



Accelerator vs Brakes: Impact of Meds

Way too wound-up / "wild" ("Tigger - on crack")

Too wound-up (Tigger)

Optimal "Goldilocks" Arousal

"Goldilocks" Comfort Zone
"Just Right" Energy Level

Bored / Low energy / Tired & sleepy (Ee-yore)

Total shut-down (via parasympathetics) "Ee-yore on Quaaludes"

Changing Landscape of Psychotropic Medication

- Since 2000, many new medications available
- It is difficult for primary care physicians to keep pace with new behavioral meds
- Especially tough for JJ/MH/CW professionals and caregivers to get ***useful*** information on psychotropic medication
- New choices = new treatment opportunities

Psychopharmacologic Treatment

- Critical questions:
  - ***When*** to do meds!
  - ***Which med*** to do first?
- Adequate follow-up essential (the details matter!)
- For optimal medication treatment:
  - Need effective ***collaboration / communication***
    - With parents / teachers / MH professionals / other supervisory adults (tutors / coaches / case managers / direct care staff / OT's / SLP's)

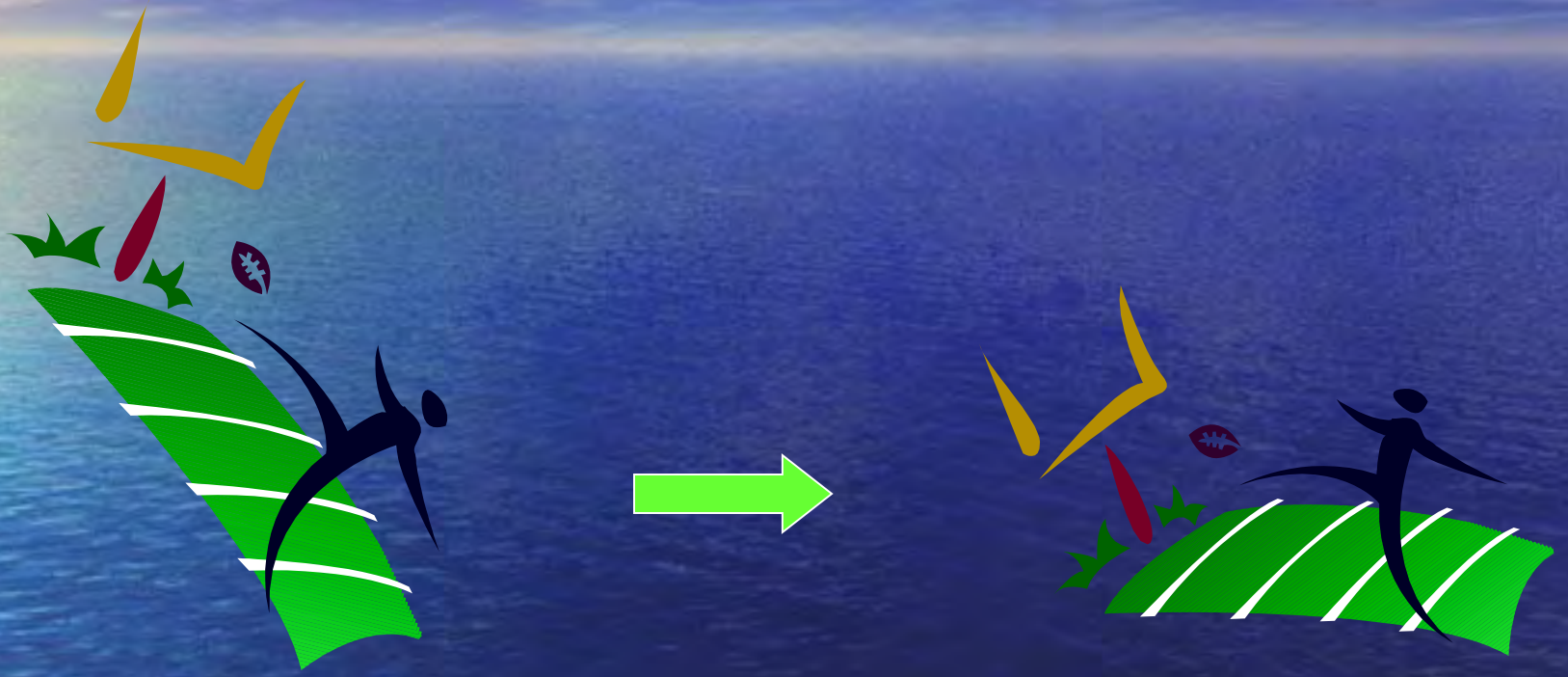
Psychopharmacologic Treatment

- Important points in using medications:
  - ***Target Symptoms*** vs DSM-5 Diagnoses
  - "Deconstructing the DSM"
  - ***Impairment of function*** requirement:
    - **Starting** medications
    - Changing medication **doses**
    - Changing **type** of medication

FASD: Medication Realities

- Minimal evidence base
- Doom & Gloom mindset prevails
- Wide dose ranges: animal studies c/w clinical experience
- Clinical persistence is essential
- ***Reality-based optimism*** is key

Remember, its all about…



Leveling the playing field !!!

Specifics of optimized brain-based medication treatment

Optimized Brain-based Medication Treatment

- Major target area: **Brakes:**
  - Focus / concentration
  - Executive dysfunction
    - Working memory
    - Impulse control
    - Hyperactivity
  - Faster recovery from anger / explosiveness

- Major target area: **Accelerator:**
  - Sleep / arousal
  - Limbic irritability
    - Anger / explosiveness
    - Mood lability
  - Anxiety / OCD
  - Panic / Fight-Flight
  - Depression

Psychotropic Medication Proposed Model (Sloane 2011)

Key Clinical Questions:

1) Sleep Issues? Y or N
2) Severe Mood Issues? Y or N
3) Complex Affect Regulation Issues? Y or N
   a) Impulse Control / Hyperactivity
   b) Anger/emotional outbursts (including anxiety / panic / traumatic hyperarousal)

(Focus on 24/7 optimization of regulation)➔➔

Psychotropic Medication
Proposed Model

- When regulation is solid, is there residual:

4) Low motivation / low arousal? Y or N
5) ↓ focus / attention? Y or N
6) Depression? / Anxiety-worry? Y or N

Trauma-informed Medication
Specifics, Logistics, Ethics

- Who should Rx our kids?
  - Primary Care Providers (with support; e.g., MC3)
  - General Psychiatrists
  - Child & Adolescent Psychiatrists
- How can we ***surround*** PCPs with support?
- ***How long*** should we treat?
- How can we best monitor ***functional impact***?

Specifics of Trauma-informed Brain-based Medication Tx

1) Sleep issues in FASD / Trauma

- Chicken meets egg: Sleep can improve regulation
  - …yet optimal regulation can improve sleep
- Not enough ***sleep study*** data in complex kids
- ***Insufficient research*** re sleep meds in kids
- ***Sleep hygiene*** is essential
- Melatonin is typically 1st option (solid database)
- ***Clonidine*** helps sleep onset
- Trazodone / Quetiapine (can ↑ sleep quality)
- Prazosin (traumatic nightmares)

2) Severe mood issues in complex kids with FASD / trauma

- Who will treat these kids?
- Is child ***telepsychiatry*** working in your area?
- Improving / strengthening connections / collaboration between PC and psychiatry
- ***MCCC Program*** expanding to the hinterlands…are you familiar?...enrolled?
- Transfer issues not being adequately addressed
- PC-psychiatric nurse liaison: promising model

2) Severe mood issues
in complex kids with FASD / trauma

- Remember: intense / drastic behaviors ***DO NOT AUTOMATICALLY =*** serious MH issues
- Behavior that results in ***disrupted placements*** gets everyone's attention
- Bipolar diagnosis very difficult here (Kiki Chang, MD)
- Length of meltdown is critical
  - "Thunderstorm" anger (5 – 15 minutes)
  - "Gray area" (15 – 45 minutes)
  - OMG Level brain issues (45 minutes and longer)

2) Severe Mood Issues
in complex kids with FASD / trauma

- Atypical antipsychotic use
  - Do atypical antipsychotics really stabilize mood?
  - Don't assume ***parent bipolar*** Dx is accurate
  - Soooooo many side effects…
- Anti-convulsant use
  - Enhanced transmission across corpus callosum
  - Oxcarbazepine, lamotrigine best options
- Lithium use
  - Emerging evidence base in kids / not a PC med

3) Complex Affect Regulation
Brakes vs Accelerator

- This is the most crucial medication step!
- Frequent and ubiquitous
- ***Essential Primary Care role here***
- ADHD + anxiety → anger / aggression
- Order of treatment is still an art
  - Brakes first?
  - Accelerator first?

3) Executive Function Treatment

Brakes Tx is key to optimal regulation

- Think brakes…not ADHD
- Our negative clinical experience with first-line stimulant Tx in trauma and FASD
- Atomoxetine emerges in 2003 as non-stimulant
- ***Guanfacine*** extended-release as first line Tx
- ***Clonidine*** extended-release: brakes + accel Tx
- Stimulants still have a role…after alpha-2 fails & to augment executive function
  - Details matter here…many new options

3) Guanfacine-Extended Release

- ***Not the same as generic guanfacine***
- Amy Arnsten, PhD breaks tradition at Yale
  - Stress-related executive function data
- Dose range: 1 mg to 4 mg / day (once or twice/d)
- Extensive experience with young kids (250+ kids)
- Can use with stimulants (1 + 1 = 5 ***synergy***)
- Enhanced emotional processing realities
  - "That $#!+ gives me Velcro memories for the bad stuff that happened to me"

3) Clonidine-Extended Release
(Is brand name superior to generic?)

- Brakes + accelerator synergistic impact
- Improves traumatic hyperarousal
- Much less sedating than generic clonidine
- Quietly changing the culture in residential
- Can use with stimulants (similar to guanfacine ER)
  - Synergistic impact can be impressive
  - Improves side effects for both meds
- Dose range: 0.1 mg to 0.4 mg in two doses

3) Anxiety Treatment & Regulation Impact
Medication impact on accelerator function

- Complex concepts: genetic serotonin issues + prenatal factors + trauma impact
- Avoiding the atypical antipsychotic anxiety trap
- All SSRIs are ***not*** created equal
  - ***Escitalopram*** is the "purest" SSRI
  - ***Sertraline*** can exacerbate anxiety early on
- ***Buspirone*** makes a quiet comeback
- ***Hydroxyzine*** can be useful PRN or at HS

Psychotropic Medication
Proposed Model-Page 2

- When regulation is solid, is there:

4) Low motivation / low arousal? Y or N
5) ↓ focus / attention? Y or N
6) Depression? / Anxiety-worry? Y or N

4) Intrinsic Motivation / Arousal Issues

- After regulation is optimized (via guanfacine ER plus escitalopram)...now what???
- Careful when assuming low arousal = med S/E
- Everyone has intrinsic arousal level fingerprint
  - This can be masked / obscured by "bad wiring"
- Intrinsic motivation (AKA "Give a $#!+ level")
  - Not automatically equal to arousal level
- Modafinil vs stimulant treatment to address arousal / intrinsic motivation issues

5) Focus / Attention Issues

- After regulation is optimized, some complex kids continue to struggle with focus & attention
- Often becomes apparent in grades 3, 4, 5
- Low-dose stimulant treatment can be gamechanger
- In FASD kids, this may be due to direct brain damage
- www.cogmed.com options
- ACTIVATE www.c8sciences.com

6) Chronic Anxiety & Worry

- After regulation is optimized and after living in a safe place for a while, many traumatized / FASD kids start a ***worry / "what if"*** barrage
- Generalized Anxiety Disorder genetics can hide behind severe behaviors / regulatory issues
- GAD is quietly and powerfully devastating in adults without trauma
- ↑ SSRI dose trial / buspirone options

6) Dysthymia / Depression

- Chronic low-grade depressive symptoms can also hide behind severe behavioral / regulatory dysfunction
- Become more obvious after optimized regulation occurs
- Can respond to SSRI, bupropion, other meds

Psychotropic Medication Proposed Model - Page 3

- Are medications now optimized? Y or N
- Is the playing field now level? Y or N
- If not, use other physiologic treatments:
  - Sensory-focused occupational therapy
  - Exercise / Complex Movement (Zero-hour PE, Yoga, Tai Chi, ***SMART*** program at Boston U, ACTIVATE at Yale Med)
  - Optimized nutrition (more protein, less processed food) – Nutritional Neuroscience advances
  - Expressive Therapies (***Music***, Art, Dance)

OK, lets get practical!!!!!

Trauma/FASD Case Presentation

- 6 year-old adopted male (placed at 3 yrs of age)
- CC: ADHD Sx/ Anger outbursts / Defiant behavior / mood swings in all settings
- Clear functional impairment everywhere
- Prenatal stress / nicotine / cannabis / ETOH exposure (no formal FASD eval / diagnosis)
- Postnatal: complex trauma (neglect/DV/PA)
- Solid adoptive family with good structure and reasonable attachment

Trauma Case Presentation
School Data

- Behavioral Data: Vanderbilt-T c/w ADHD; positive ODD screen; positive mood screen
- Testing data: VIQ 92, PIQ 108, no evidence of Specific LD (math is strength)
- Social: Some relational issues with peers, adults love him when he's "good"; no ASD concerns
- Works better 1 to 1
- Fragile temperament on some days

Trauma Case Presentation
Home Data

- Vanderbilt-P c/w ADHD, positive OCD screen; positive mood screen
- "Worries about everything ..What if…"
- Occasional panic that turns into anger
- Aggressive with older bio sib (placed w/ him)
- Sleep is inconsistent (sleep onset is usually prolonged / sleep quality is up and down)
- Parents are very frustrated with him

Trauma Case Presentation
Previous treatment

- Has had excellent trauma-informed play therapy from an excellent clinician before adoption finalized
- Parents now seeing a behavioral specialist (BS) who seems to be over concerned with the parents inability to provide consequences
- BS not very interested in past trauma or prenatal history
- Had OT as part of *Early On* at age 2-3

Trauma Case Presentation
Now What Doctor???

- Are there further key clinical questions?
- What is the diagnostic profile?
- What is the treatment plan?
- When is the follow up visit?

Trauma Case Presentation
Key Clinical Questions

- Anger clarification
  - How long are the episodes?
  - How frequent?
  - How intense?
- Anxiety clarification
- Sleep clarification
- Family History

Trauma Case Presentation
Clinical answers

- Brief (2-5 minutes) T-storm anger episodes
- Remorseful after each…then often asks…"Can I still live here?" (suitcase packed & ready on occ)
- Anxiety is not r/t previous trauma (GAD "feel")
- Sleep is clearly tied to next day behavior
- Sleep hygiene is solid / TST is ↓
- Family history is vague: +/- Bipolar / ADHD / SUD / major trauma in both parents

Trauma Case Presentation
Clinical Findings

- Active and alert engaging/likable young man (Ht 25% Wt 45%/ nl VS)
- Non-stop moving around / exploring office
- No overt anxiety / depression
- A bit difficult to examine d/t activity
- Some neuromaturational issues
- General physical exam is unremarkable
- FASD features: 4 philtrum, 2 Lip, PF <-2 (CAC)
- Nice connection with adoptive mom

Trauma Case Presentation
Diagnostic Profile

- ADHD-Combined
  - Executive dysfunction
  - Regulatory Dysfunction
- Anxiety Disorder, unspecified
- History of Complex Trauma exposure
- Prenatal stress / drug exposure / ARND
- Sleep disturbance (1° vs 2°)
- What about bipolar????

Trauma Case Presentation
Treatment Plan

- What is your first step?

Trauma Case Presentation
Treatment Plan

- Treat sleep first
  - Enhance / Fortify sleep hygiene strategies
  - Melatonin 1-3 mg qHS
  - Clonidine 0.1 mg qHS
- Re-eval in 4 weeks to determine improved sleep impact on behavioral performance
- Improved sleep has minimal impact on behavioral performance at school / a bit less fragile emotionally at home

Trauma Case Presentation
Treatment Plan

- What now Dr.????
- School asking mom: Has the doctor decided on next steps???????????

Trauma Case Presentation
Treatment Plan

- Treat ADHD / Executive dysfunction
  - Stimulant trial??? (which med?)
  - Non-stimulant trial???
    - Atomoxetine
    - ER-guanfacine
    - ER-clonidine

Trauma Case Presentation
Treatment Plan

- Case against stimulants
  - CTAC unpublished data (n=140) showed 80% of traumatized kids mood worsened on stimulant as first med trial
  - Co-occurring anxiety seen in this case also supports decision away from stimulant trial
  - Can always do this later and see rapid clinical changes good or bad

Trauma Case Presentation
Treatment Plan

- Non-stimulant trial
  - Atomoxetine is not preferred due to potential for mood s/e (NE MOA can cause irritability / anger/explosiveness/aggression)
  - Guanfacine-ER is our preferred choice here
  - Extensive experience in 3-6 age group (200 kids successfully treated in Kalamazoo)
  - Amy Arnsten demo'd ↑ working memory in stressed monkeys w/ guanfacine in her primate lab at Yale
  - Less sedating than clonidine ER

Trauma Case Presentation
Treatment Plan

- Feedback from guanfacine-ER trial
- 1 mg BID dosing regimen
  - Improved regulation in all settings
  - Decreased hyperactivity / impulsivity
  - Better compliance with behavioral programs
  - No personality changes / well tolerated
  - Talks more about his feelings
  - Anxiety / worry may be a bit worse but not yet functionally impairing

Trauma Case Presentation
Treatment Plan

- Are we done yet???

Trauma Case Presentation
Treatment Plan

- Follow anxiety closely
  - SSRI trial if worsens (watch for hypomania)
- Monitor arousal/ intrinsic motivation / focus as he advances thru school and academic challenges increase
  - Consider low-dose stimulant trial
  - Consider OT/exercise program to ↑ arousal
  - Consider ACTIVATE program

Trauma / FASD Case Presentation
Treatment Plan

- How long to treat?
- How often to follow?
- Does he need more trauma therapy?
- How about FASD interventions?
- Parent resources: www.nctsn.org
- Deb Evensen: www.fasalaska.com

Lets do another case!

Trauma/FASD Case Presentation

- 12 year-old adopted male (placed at 3 yrs of age)
- CC: ADHD Sx/ Anger outbursts / Defiant behavior / mood swings in all settings
- Prenatal stress / nicotine / cannabis / ETOH exposure (no formal FASD eval / diagnosis)
- Postnatal: complex trauma (neglect/DV/PA)
- Solid adoptive family with good structure and reasonable attachment…but divorce rocks family and starts downward spiral at age 10

Trauma Case Presentation
Initial School Data

- Behavioral Data: Vanderbilt-T c/w ADHD; positive ODD screen; positive mood screen
- Testing data: VIQ 92, PIQ 108, no evidence of SLD (math is strength)
- Social: Some relational issues with peers, adults love him when he's "good"; no ASD concerns
- Works better 1 to 1
- Fragile temperament on some days
- School performance plummets after divorce

Trauma Case Presentation
Initial Home Data

- Vanderbilt-P c/w ADHD, positive OCD screen; positive mood screen
- "Worries about everything ..What if…"
- Occasional panic that turns into anger
- Aggressive with older bio sib (placed w/ him)
- Sleep is inconsistent (sleep onset is usually prolonged / sleep quality is up and down)
- Parents are very frustrated with him

Recent Clinical Update

- Bitter divorce rocks family…Dad previous SUD problems worsen…physical abuse during his weekend leads to open CPS case
- School behavior becomes untenable…suspensions become more frequent
- Mom increasingly withdraws…confusing for him
- Intensive outpatient psychotherapy fails
- Aggressive CMH med treatment has no impact
- Residential care becomes best option

Trauma Case Presentation
Medication treatment status

- Medication profile on residential entry:
  - Aripiprazole 15 mg qD
  - Risperidone 0.5 mg BID
  - Quetiapine 50 mg qHS
  - Valproate ER 500 mg BID
  - Mixed-salt amphetamine XR 15 mg qD (failed higher doses)

Trauma Case
Current presentation

- Reactive intense anger and aggression (worse in afternoon and evening)
- Unpredictable outbursts…baffling to all
- Jekyl & Hyde feel…can be quite engaging when regulated
- Complains "these meds are killin me"
- Shuts down when frustrated…slow boil followed by explosions

Trauma Case
Initial Residential Assessment

- Significant executive dysfunction
- Significant anxiety and panic symptoms
- PTSD is overt and impairing
- Some prenatal exposure to drugs and alcohol but details are few
- Review of DHHS records reveals that both bio parents had severe complex trauma issues as kids

Trauma Case
Med Approach in Residential

- After baseline stabilization and comprehensive trauma assessment…
- Which med to wean first?
- How to address findings of CC assessment
- Able to wean aripiprazole

Trauma Case

- Start with brakes treatment…
  - Wean Mixed-salt amphet. to check anxiety impact
  - ***Extended-release clonidine trial is next***
- Treat anxiety (anxiety genetics + trauma) early in the game
  - SSRIs underused in this clinical population
  - Buspirone also underutilized

Trauma Case

- ***Extended-release clonidine helps regulation significantly***
- Now CC is able to tolerate low-dose lisdexamfetamine… which is synergistic with extended-release clonidine
- Then treat the pedal (anxiety) w/ escitalopram or buspirone (less risk for manic switching)
  - Allows him to manage his emotions better during trauma therapy

Trauma Case

- ER-clonidine + lisdexamfetamine + escitalopram combo allows further med weaning (risperidone and valproate)
- Sleep benefits from low-dose quetiapine remain
- Trauma therapy is now more effective
- Music therapy / Yoga helps his mindfulness

Comparing the two models

DSM 5 Model

- Risperidone
- Quetiapine
- Aripiprazole
- Above 3 meds are all accelerator-based
- No brakes treatment
- Multiple side effects
  - Cognitive dulling (Risper-duh!)
  - Personality change
  - Weight gain

Brain-based Model

- ER-clonidine
- Escitalopram
- Lisdexamfetamine
- Quetiapine (low-dose at HS)
- Brakes – accelerator balance
- Improved SE Profile
  - Cognitive enhancement
  - No to minimal personality change
  - No weight gain risk

Thank you!

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