



A NEUROPSYCHIATRIC APPROACH TO AGGRESSIVE BEHAVIOR IN PERSONS WITH INTELLECTUAL AND DEVELOPMENTAL DISABILITIES

Sheldon Benjamin, MD
UMass Medical School

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**CHOOSING A Rx FOR AGGRESSION
(Lecture Outline)**

**READY...
AIM...
FIRE!!**

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**LECTURE OUTLINE
For Traditionalists**

- Neuropsychiatric “4 P” approach to describing aggressive behavior
- Behaviorally friendly prescribing

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**NO PRESCRIPTION
WITHOUT DESCRIPTION!**

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Neuropsychiatric Approach to Aggression

<p>Analysis of Aggressive Episodes</p> <ul style="list-style-type: none"> Precipitants Prodrome Purpose Patterns <p>Behavioral Analysis</p> <p>Treatment Plan</p>	<p>READY</p> <p>↓</p> <p>AIM</p> <p>↓</p> <p>FIRE</p>
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READY...

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AGGRESSION
Neuropsychiatric Evaluation

PRECIPITANTS

- Environmental changes
- Increased stimulation
- Internal conflict
- Psychosocial stressors
- Trivial provocation
- No obvious precipitant
- Planned attack

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AGGRESSION
Neuropsychiatric Evaluation

PRODROME

- Sleep deprivation
- Hyperphagia
- Polydipsia
- Psychotic symptoms
- Anxiety/panic
- Sadness/depression
- Psychomotor excitement
- Euphoria
- Irritability
- Increased rituals
- Delirium
- Signs of intoxication/withdrawal

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AGGRESSION
Neuropsychiatric Evaluation

PURPOSE?

- Violence directed?
- Length of episode
- Time of day of episode
- Clear onset and ending?
- Consciousness clear or clouded?
- Amnesia for episode?
- Remorse afterwards?

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AGGRESSION
Neuropsychiatric Evaluation

PATTERNS

- New-onset aggression in non-verbal individuals
- Irritability
- Focal neurobehavioral syndromes
 - Orbitofrontal syndrome
 - Dorsolateral frontal syndrome
 - Right hemisphere syndrome
 - Diencephalic syndrome
 - Pseudobulbar palsy
- Limbic seizure-related behaviors
 - Prodromal, ictal, post-ictal, interictal
- Axis I Disorders
 - Intermittent explosive disorder
 - ADHD/ODD
 - Asperger disorder
 - Psychotic, affective, anxiety disorders
 - Substance-induced
- Genetic Predisposition
 - Low 5-HT syndrome
 - Brunner syndrome
- Self-injurious behavior
 - Autism and MR
 - Lesch-Nyhan
 - MECP2
 - Smith Magenis
 - Borderline personality

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CAUSES OF NEW-ONSET AGGRESSIVE BEHAVIOR IN NON-VERBAL INDIVIDUALS

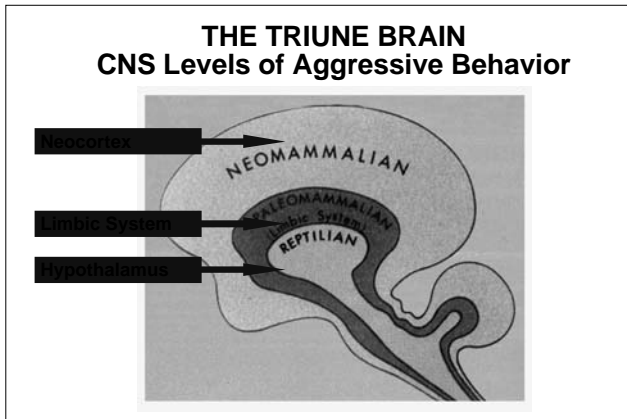
<ul style="list-style-type: none"> ■ Headache ■ Otitis media ■ Dental pain ■ Constipation ■ GI distress ■ Dysmenorrhea ■ Visual problems 	<ul style="list-style-type: none"> ■ Urinary tract infection ■ Occult infection ■ Unseen head injury ■ Metabolic abnormality ■ Akathisia ■ Other medication side effects
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CAUSES OF IRRITABILITY

<ul style="list-style-type: none"> ■ Medication/drug-induced ■ Substance withdrawal ■ Post-traumatic ■ Post-ictal ■ Seizure prodrome ■ Hyperthyroidism ■ Akathisia 	<ul style="list-style-type: none"> ■ Late luteal phase dysphoria ■ Post-traumatic stress disorder ■ Anxiety disorders ■ Mood disorders ■ Psychotic disorders ■ Personality disorders ■ Personality trait
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FOCAL NEUROBEHAVIOR SYNDROMES Orbitofrontal Syndrome

Orbitofrontal Cortex
Amygdala (Medial Temporal Lobe)

- Child-like euphoria (“moria”)
- Facetious humor (“witzelsucht”)
- Shallow, labile affect
- Social disinhibition
- Impaired judgement, tact, foresight
- Impulsive, distractible
- Difficulty maintaining set

May be Acquired OR Developmental

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FOCAL NEUROBEHAVIOR SYNDROMES Dorsolateral Prefrontal Syndrome

- Abulic, unmotivated
- Apathetic (occasional outbursts)
- Psychomotor slowing
- Concrete, stimulus bound
- Perseverative, poor problem solving

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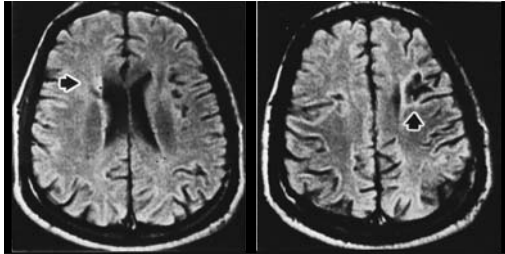
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FRONTAL LOBE SYNDROMES

<p>DORSOLATERAL</p> <ul style="list-style-type: none"> ■ Abulic, unmotivated ■ Apathetic ■ Psychomotor slowing ■ Poor problem solving ■ Occasional outbursts ■ “Pseudodepressed” 	<p>ORBITOFRONTAL</p> <ul style="list-style-type: none"> ■ Impulsive, disinhibited ■ Inappropriate jocularity ■ May be hyperactive ■ Emotional lability ■ Frequent outbursts ■ “Pseudopsychopathic”
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CONGENITAL FRONTAL SYNDROME (G.K.)

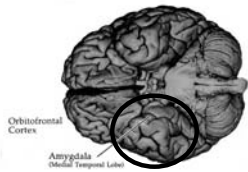


(Price et al, 1990)

Non-verbal (Right Hemisphere) LD

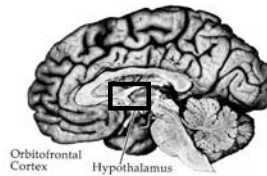
- PIQ < VIQ
- Left neglect
- Shy
- Poor eye contact
- Poor arithmetic skills
- Decreased use of gestures
- Flat, peculiar, or decreased ability to modulate affect
- Tendency toward recurrent depression

Limbic Seizure Phase & Behavior



- | | |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PERI-ICTAL | <p>Prodrome
Anxiety, dysphoria</p> <p>Ictus
Affective, perceptual, cognitive</p> <p>Post-ictal
Confusion, aggression, mood change, psychosis</p> |
| INTER-ICTAL | <p>Interictal
Personality, psychosis, depression/dysphoria</p> |

FOCAL NEUROBEHAVIOR SYNDROMES Diencephalic Syndrome



- **Prodrome:** Polydipsia, Hyperphagia, sleep phase change, hypersexuality
- **Precipitant:** Territorial defensiveness, tactile defensiveness, blocked access to food or drink
- **Associated behaviors:** Pica, food stealing, drinking large quantities of fluid, irregular menses

Other Known Patterns

- Pseudobulbar affect
- Intermittent Explosive Disorder
- Asperger Disorder
- Low Serotonin Syndrome
- Brunner Syndrome

FOCAL PSEUDOBULBAR AFFECT: IT'S A BIGGER PROBLEM THAN YOU MAY REALIZE.

Pathology

May be associated with

Much more common in

Dyscalculia

Facial

Hypertension

Externalizing

Seen in

lesions

NEW PERSPECTIVES ON AN UNDERRECOGNIZED AND UNDERTREATED SYNDROME

Pseudobulbar affect: It's a bigger problem than you may realize.

PBA is surprisingly prevalent

Pseudobulbar affect (PBA), also known as emotional lability, is an affective disturbance syndrome characterized by involuntary episodes of the entire spectrum of emotion, such as inappropriate laughing or crying. These episodes are generally discordant with or disproportionate to the social context. PBA occurs secondary to neurological disorders such as stroke, multiple sclerosis (MS), amyotrophic lateral sclerosis (ALS), dementia, traumatic brain injury (TBI), or neurological injury, such as spinal cord injury (SCI).

Estimates suggest that 10% to 15% of patients with these underlying conditions may be affected, exceeding 1 million PBA patients in the U.S. alone.

PBA can be a significant burden on both patients and their caregivers

The symptoms of PBA can be severe, with recurrent and unmitigated episodes. Patients find these episodes of involuntary emotional expression disruptive in both social and occupational settings. They may also experience associated anxiety, embarrassment, and depression, resulting in social isolation. PBA often has a significant impact on the patient's family and caregivers, and can lead to hospitalizations at home and in patient care facilities.

PBA presents a diagnostic challenge for physicians

PBA is often misdiagnosed or mislabeled as "major depressive episodes" in particular can be misread as a sign of depression, the classic

Addressing PBA is important

Addressing PBA is an important component in the overall management of patients with neurological disease or injury. Pseudobulbar affect symptoms can help patients to engage with family and friends and reduce disability at home and in patient care facilities.

Treatments for PBA are needed

There is currently no approved drug indicated to treat PBA. PBA treatments are needed to reduce episodes of affective dysregulation and provide the social isolation and disruption among PBA patients and their caregivers. Avian Pharmaceuticals is a pharmaceutical company committed to identifying, developing, and commercializing novel therapeutic products for the treatment of PBA and other neurodegenerative conditions.

Avian Pharmaceuticals

INTERMITTENT EXPLOSIVE DISORDER DSM-IV-TR Criteria

- Discrete episodes of failure to resist aggressive impulses with serious assaults or property destruction
- Aggression grossly out of proportion to any precipitant
- Not better accounted for by another disorder, substance effect, or medical condition

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Asperger Disorder

- Autistic features but relatively intact verbal skills (wooden, unnatural or idiosyncratic language)
- Impaired non-verbal expression
- Aggression may occur due to lack of effective verbal skills (often can't use words to convey feelings)

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GENETIC PREDISPOSITION Low Serotonin (5-HT) Syndrome

- Family history of alcoholism
- Early alcohol abuse
- Early impulsive violence
- Increased suicide risk
- Hypoglycemia
- Low CSF 5-HIAA

(Linnoila & Virkkunen, 1992)

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GENETIC PREDISPOSITION Brunner Syndrome

- One family described
- MAO_A-deficient males
- Premature stop codon in MAO_A coding region
- Non dysmorphic
- Mild MR/Borderline intellect
- Shy, withdrawn
- Behavioral outbursts in 1-3 day clusters associated with poor sleep and frequent night terrors
- Sexually aberrant behavior
- Stereotyped hand movements

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ESCHEW HYPOTHESIS-FREE PSYCHOPHARMACOLOGY



“Why don't my patients get better? I've bled them, purged them, and drugged them.... I don't get it.”

AIM...

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AGGRESSIVE BEHAVIOR Pharmacologic Management

AGENTS COMMONLY USED FOR AGGRESSION

- | | |
|-----------------|------------------|
| Anticonvulsants | Antidepressants |
| Benzodiazepines | SSRI's |
| Beta Blockers | Trazodone |
| Neuroleptics | Bupirone |
| (atypicals) | Naltrexone (SIB) |
| Lithium | Psychostimulants |
- FDA-approved agents for aggression: None*
- Agents in development: Serenics*

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AGGRESSION Behavioral Treatment

- Define target behavior(s) clearly
 - Choose single target behavior
 - Specify antecedent behaviors
 - Avoid inadvertent reinforcement
 - Minimize unstructured time
 - Maintain staff consistency across shifts
- Very difficult for parents to do DRO, but can become behaviorally savvy

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AGGRESSION Behavioral Approach to Meds

- Reduce antecedent behaviors
- Reward for alternative desirable behavior
- Reduce reinforcement for aggression
- One behavior plan (or med) change at a time
- Avoid changing behavior plan and medication at the same time

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AGGRESSIVE BEHAVIOR Approach to Medication

- New onset? R/O medical cause
- Irritability? R/O med-induced
- Countable behaviors
- Rating scales
- Baseline data BEFORE prescribing
- Change meds slowly
- "ABA" or "ABAB" protocol when possible
- Simplifying anticonvulsants may help
- Use PRN's cautiously

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FIRE!

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AGGRESSION RX: THE BIG FOUR ANTICONVULSANTS

- Epileptiform EEG (even without epilepsy)
- Intermittent explosive disorder
- Bipolar disorder
- Epilepsy
- Normal behavior between episodes

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AGGRESSION RX: THE BIG FOUR BETA-BLOCKERS

- Explosive at all times
- Traumatic brain injury
- Diencephalic aggression
- Aggression in response to routine requests

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AGGRESSION RX: THE BIG FOUR SSRI's

- Affective aggression
- Dysphoria/depression
- OCD-like behavior
- PTSD
- Datable onset of behavior change without medical cause
- Aggression unresponsive to other interventions

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AGGRESSION RX: THE BIG FOUR Atypical Neuroleptics

- Psychosis
 - Bipolar disorder
 - Life-threatening aggression
 - Other interventions without benefit
- Not a first choice: complex side effects can be hard to tell from behavior exacerbation

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AGGRESSION If you Must Choose a 2nd Agent...

- Maximize single agent first
Increase dose if possible when mild effect noted. Discontinue first agent unless proven effective.
- Consider interactions & compliance
- Adding anticonvulsant may reduce level of other psychoactive agents
- Adding propranolol may increase levels of other agents

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DON'T "BELIEVE" IN TREATMENTS TEST THEM



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Further Reading

Benjamin S: "A Neuropsychiatric Approach to Aggressive Behavior" in Ovsiew F, Neuropsychiatry in the Public Sector, American Psychiatric Press, Inc., Washington, D.C., 1999.

Benjamin S: A Neuropsychiatric Approach to Behavioral Issues in Epilepsy, Clinical Nursing Practice in Epilepsy, 1(4), 7-12, 2000.

sheldon.benjamin@umassmed.edu

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