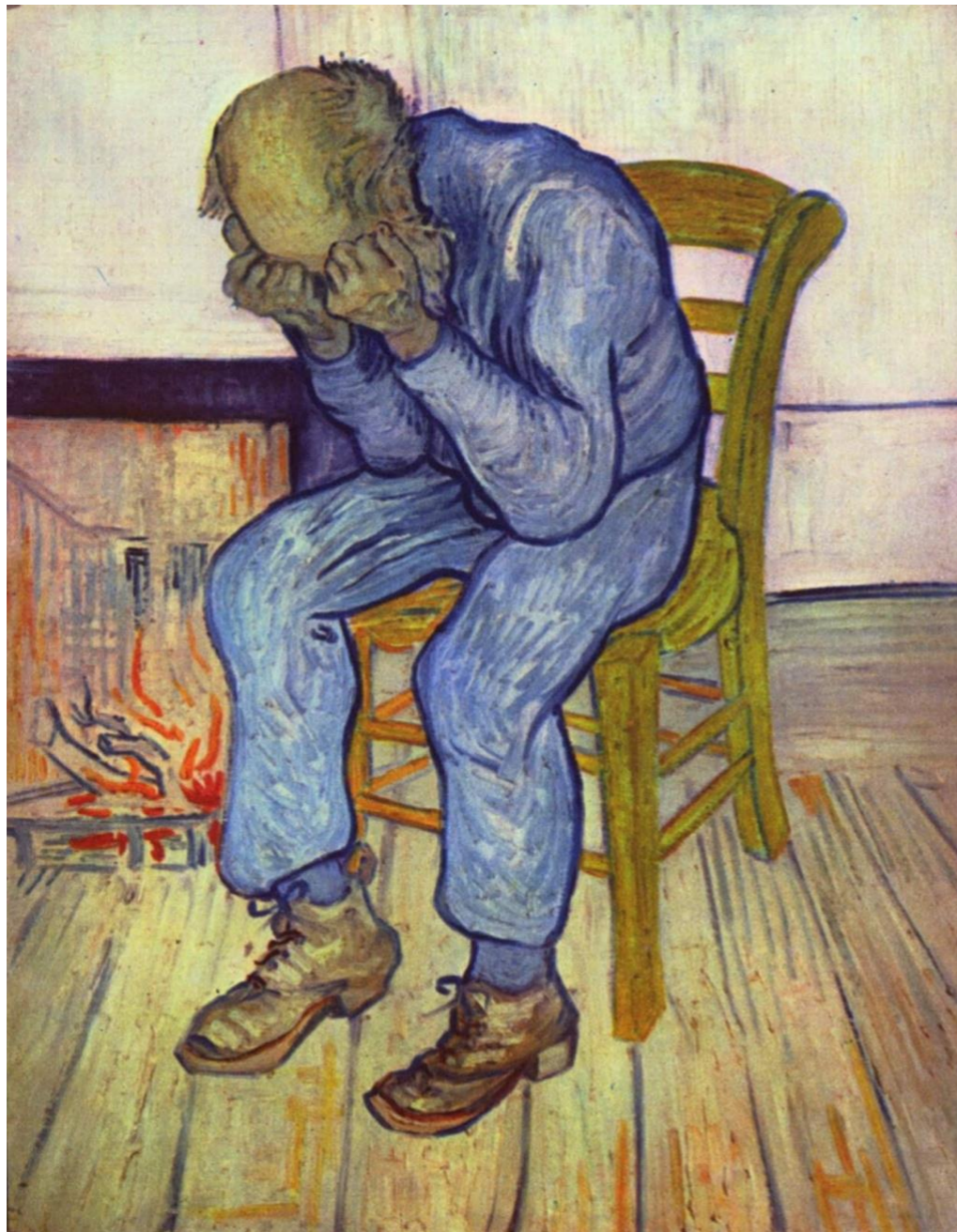




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CATATONIA: THE IMPORTANCE OF DETECTION AND TREATMENT

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WHAT WE WILL DO TODAY

- Review epidemiology
- Discuss why catatonia gets missed
- Describe etiology hypotheses
- Show how to diagnose catatonia
- Review how to treat catatonia

DEFINITION

- A neuropsychiatric syndrome of altered mental status and characteristic psychomotor findings associated with a wide variety of psychiatric, neurological and medical conditions.



OFTEN DIVIDED INTO 2 TYPES

Withdrawn subtype

- Stupor
- Mutism
- Posturing
- Rigidity

Excited subtype

- Hyperactivity
- Disorganized overproductive speech
- Strange mannerisms
- Combativeness

Often patients exhibit features of both

EPIDEMIOLOGY: PSYCHIATRIC

- ~10% of all psychiatric inpatients have this neuropsychiatric motor syndrome
- This has been replicated in multiple studies in many countries

EPIDEMIOLOGY: NON-PSYCHIATRIC

- Prevalence for catatonia due to a medical condition is unknown
- Studies have found prevalence ranging from 7%-45% in various clinical settings¹
- One study of ICU pts found prevalence of ~4%²

WHO GETS CATATONIA?

- Psychiatric disorders- mood most common (bipolar most common dx!), schizophrenia
- Neurologic conditions
 - Seizures, TBI, stroke, MS, encephalitis
- General medical conditions/Toxic/metabolic states
 - Endocrinopathies, autoimmune dz, viral infections, drug intoxication/withdrawal

WHY DO WE MISS THE DIAGNOSIS?

- Common misconception is that catatonia is exclusive to schizophrenia
- Many do not realize that catatonia occurs in the absence of any psychiatric diagnosis!
- We don't see what we don't see!

A BAD THING TO MISS

- Patients are allowed to remain ill
- Though catatonia can be benign and self-limiting, it also can be **chronic, life-altering, or lethal**

A TRAGIC EXAMPLE

(FROM FINK & TAYLOR, *CATATONIA*, 2003)

- In 1976, a 49-year old woman becomes severely depressed
- She has a history of two previous such episodes, both to the point of becoming withdrawn, mute and noncommunicative (age 42 and age 47)
- Both episodes were relieved by ECT

A TRAGIC EXAMPLE (CONT'D)

- This time, she responds initially to a med (TCA), but then becomes confused, mute, withdrawn and wanders aimlessly
- She is then diagnosed by a neurologist as having Alzheimer's disease due to head CT showing "cortical atrophy"
- Family is told "there's nothing more to do"

A TRAGIC EXAMPLE (CONT'D)

- For the *next nine years* she is cared for at home by husband and her five daughters
- Becomes emaciated, weighs 75 pounds.
- Wanders aimlessly, incontinent of bowel and bladder, stares at windows, grimaces, postures for long hours

A TRAGIC EXAMPLE (CONT'D)

- Eventually, is admitted to a hospital to evaluate her behavior and to confirm diagnosis of Alzheimer's
- Meds tried for a few weeks, then ECT
- After 5th ECT, becomes alert, engaging, and communicative

A TRAGIC EXAMPLE (CONT'D)

- Is amazed and puzzled to learn that it is 1985; *insists that it is 1976* (when she became withdrawn and stuporous)
- Is sure that *the grown women visiting her cannot be her daughters*, who she says are much younger
- After 13 ECTs, she is oriented, verbal, able to care for self

A TRAGIC EXAMPLE (CONT'D)

- However, she relapses easily, and needs maintenance ECT; she averages about 1 treatment per week for rest of the year
- Over the next nine years, would occasionally relapse into staring, confusion, & posturing
- Would quickly respond to short series of ECT

A TRAGIC EXAMPLE (CONT'D)

- She averages 9-19 ECT treatments per year, but enjoys her life & family
- In 1994 (at age 67), the syndrome recognized as Catatonia. Given lorazepam (3-8 mg)
- For next six years, **requires NO ECT, suffers no relapses**, takes lorazepam and antidepressants

IN SUM:

- This woman *lost nine full years* of her life to catatonic stupor
- Family lost their wife and mother for that time
- Diagnosis of catatonia made a quarter of a century after her first catatonic episode that was treated successfully w/ ECT

MEDICAL COMPLICATION

- Malnutrition
- Pressure ulcers
- Metabolic derangements
- Urinary retention
- Constipation
- rhabdomyolysis
- Contractures
- Aspiration pneumonia
- Other infectious processes
- Deep vein thrombosis
- Pulmonary emboli
- Can see autonomic instability (malignant catatonia)

DIAGNOSING CATATONIA



CLASSIFICATION

- DSM V-TR does not identify catatonia as a dx of its own
 - Catatonia associated with another mental disorder
 - Catatonia due to another medical condition
 - Unspecified catatonia

DIAGNOSING CATATONIA

- Thresholds is usually 3 cardinal symptoms
- These sx occur in a range of several hours to 24 hours to make a definitive diagnosis

Taylor m., Fink M. Catatonia in psychiatric classification: a home of its own. Am J Psychiatry 2003;160:1233-1241

Rosenbush P et al. Catatonic syndrome in a general psychiatric inpatient population: frequency, clinical presentation and response to lorazepam. J Clin Psychiatry 1990;51:357-362

THE BUSH-FRANCIS CATATONIA RATING SCALE AND SCREENING INSTRUMENT

- Excitement*
- Immobility/Stupor*
- Mutism*
- Staring*
- Posturing/catalepsy*
- Grimacing*
- Echopraxia/echolalia*
- Stereotypy*
- Mannerisms*
- Verbigeration*
- Rigidity*
- Negativism*
- Waxy flexibility*
- Withdrawal*
- Impulsivity
- Automatic obedience
- Mitgehen
- Gegenhalten
- Ambitendency
- Grasp Reflex
- Perseveration
- Combativeness
- Autonomic abnormality

Bush G, Fink M et al. Catatonia. 1. Rating scale and standardized examination. Acta Psychiatr Scand 1996;93:129-136

MNEMONIC FOR DETECTING CATATONIA: WIRED 'N' MIRED

- Waxy flexibility/catalepsy
- Immobility/stupor
- Refusal to eat or drink
- Excitement
- Deadpan staring
- Negativism/negative symptoms
- Mutism
- Impulsivity
- Rigidity
- Echolalia/echopraxia
- Direct observation

BEDSIDE EXAM

- Based on Bush-Francis Catatonia Rating Scale (BFCRS)
- Step 1: Observe pt.
 - *Activity level, abnormal movements & speech*
- Step 2: Examine arm for cogwheeling—“Keep your arm loose”—(like EPS exam). Attempt to reposition, move arm w/ lighter & heavier force
 - *Negativism, Waxy flexibility (Catalepsy), Gegenhalten (proportional resistance)*

BEDSIDE EXAM (CONT'D)

- Step 3: Ask pt. to extend arms forward: place one finger beneath each hand and try to raise slowly after stating, “Do NOT let me raise your arm.”
 - *Mitgehen (anglepoise lamp sign), automatic obedience*
- Step 4: Extend your hand as if to shake and say, “Do NOT shake my hand.”
 - *Ambitendence*

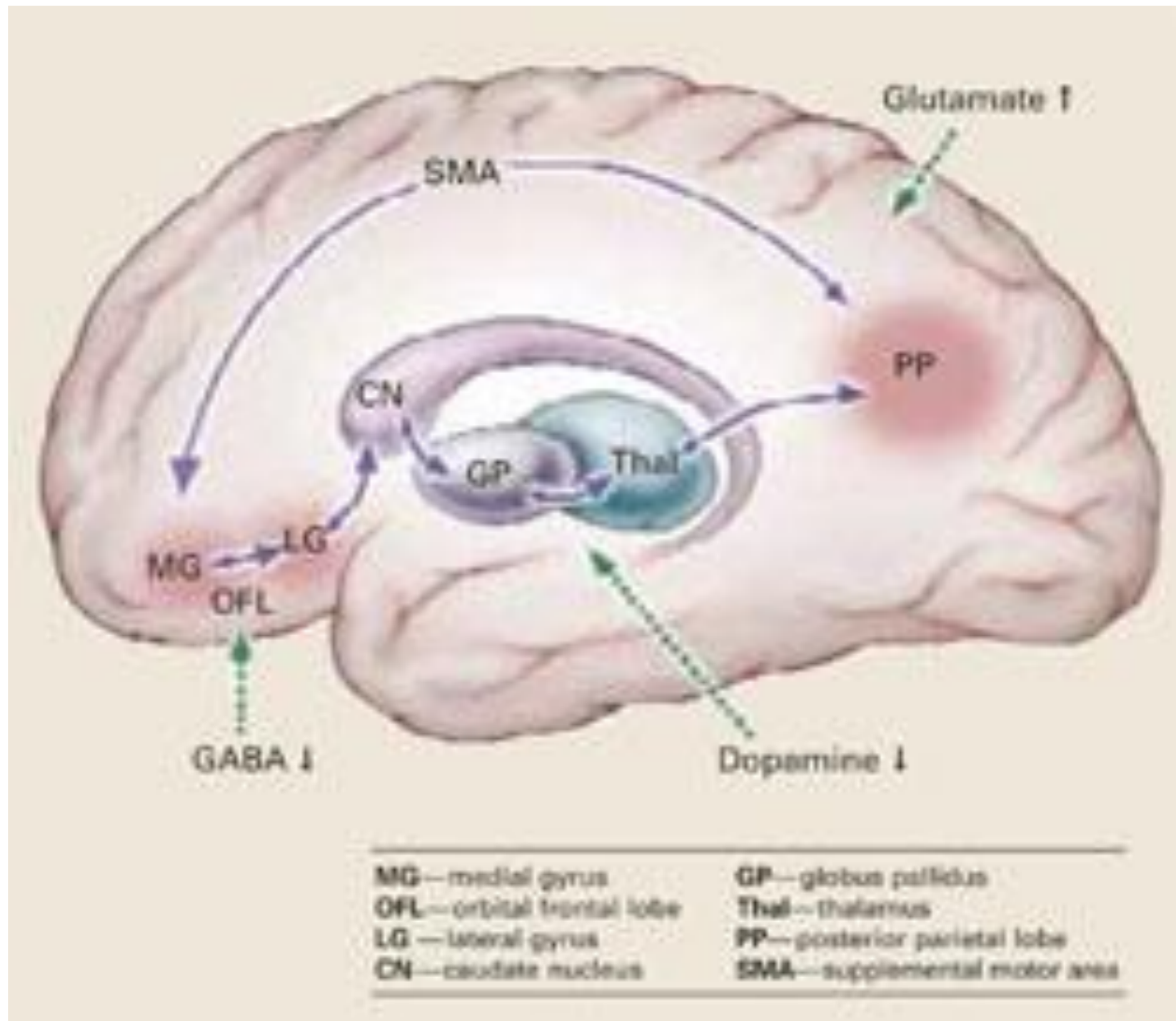
BEDSIDE EXAM (CONT'D)

- Step 5: Dramatically put hands on hips.
Dramatically scratch head (do not give instructions)
 - *echopraxia*
- Step 6: Turn hands over, palms up, lay your fingers across palms.
 - Grasp reflex
- Step 7: Chart review, esp. nursing notes
 - Oral intake, behaviors, vital signs
 - *Withdrawal, abnormal activity, presence of malignant catatonia?*

Etiology



- The pathophysiology remains poorly understood and likely represents a heterogeneous group of etiologies
- 3 main theories of the etiology of catatonia
 - low GABA-A receptor binding
 - Dopamine hypoactivity
 - Glutamate hyperactivity



Carroll B., et al. Treating persistent catatonia when benzodiazepines fail. *Current Psychiatry* 2005;4:56-64
 Carroll

Carroll B. et al: Treating persistent catatonia when benzodiazepines fail. *Current Psychiatry* 2005 4:56-64

LOW GABA-A RECEPTOR BINDING

- Benzos treat 70%+ of catatonia. Reversal of the therapeutic effects occurs with GABA-A antagonist administration
- Zolpidem, a selective GABA-A agonist, is effective for catatonia in some patients gives further support for involvement of GABAergic system

Northoff G et al. Decreased density of GABA-A receptor in the left sensorimotor cortex in akinetic catatonia: investigation of in vivo benzodiazepine receptor binding. J Neurol Neurosurg Psychiatry 1999;67:445-450

Thomas et al. Test for catatonia with zolpidem. Lancet 1997;349:702

DOPAMINE HYPOACTIVITY

- Study of schizophrenics with catatonia found lower presynaptic dopaminergic function compared to patients with other types of schizophrenia.

Hietala J et al. Presynaptic dopamine function in striatum of neuroleptic-naïve schizophrenic patients. *Lancet* 1995;346:1130-1131

GLUTAMATE HYPERACTIVITY

- NMDA hyperactivity corresponds to a loss of GABA-A and dopamine activity in these regions which may clinically present as a lorazepam-resistant catatonic syndrome.
- Amantadine- a NMDA receptor antagonist has been shown to be effective patients not responding to lorazepam. Similar findings seen with Memantine

Northoff G. Catatonia- a psychomotor syndrome. 1997 Enke, Stuttgart

Barroll B et al. Review of Adjunctive Glutamate Antagonist Therapy in the Treatment of Catatonic Syndromes. J Neuropsychiatry Clin Neurosci 2007; 19:406-411

TREATMENT



TREATMENT PRINCIPLES

- Step 1: stop offending agents/treat underlying causes
 - Stop/avoid **typical** antipsychotic meds
 - Key point: Typical antipsychotics can worsen the syndrome, push it into malignant catatonia
 - Data for atypical antipsychotics much less clear

TREATMENT PRINCIPLES

- Step 2: Treat the **syndrome** aggressively
 - Syndrome may need full resolution before treating underlying psychiatric condition
 - Increase GABA: Benzodiazepines!
 - Lorazepam 2 mg PO/IV immediately, then TID; may need 8-24 mg (or equivalent) per day

TREATMENT

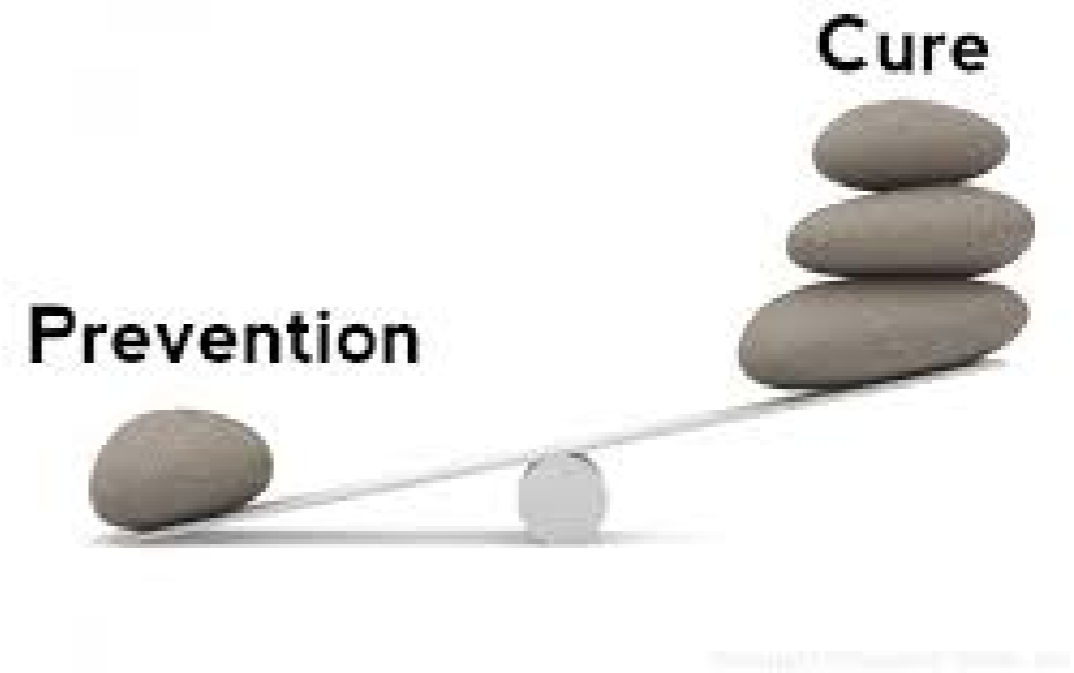
- Most studies show 70-80+% catatonic pts respond to benzodiazepines within a few days, resolution can take much longer!
- Early consideration of ECT (esp. w/ MC/NMS), which is definitive treatment (80+% effective), and can be given w/ benzos--which may be synergistic per some case series.

TREATMENT-MAINTENANCE

- Maintenance: several studies (and clinical experience) show that stopping or reducing effective doses of benzodiazepines can lead to dramatic recurrences
- Same with stopping ECT
- Some new guidelines call for benzos for **9-12 months** following resolution, and **6 months** for ECT

AN OUNCE OF PREVENTION WORTH A POUND OF CURE

- Pharmacologic DVT prophylaxis
- Aggressive skin management including skin surveys, repositioning
- Range of motion (passive or active depending on pt)/stretching daily to prevent contractures
- Monitoring nutritional status with early intervention for artificial feeding



CATATONIA CASE

- 21 yo female transferred to HMC on ITA based on GD due to progressive catatonic sx for several days.
- Trial of lorazepam 2mg IM X 1 with sedation as only response
- Started scheduled lorazepam at 1.5mg TID and titrated to 3mg TID

- Catatonic symptoms began to soften with gradual loss of waxy flexibility, able to eat full meals po, walking with assist, speaking softly to mother. This took 19 days.
- Tried zolpidem 10mg X 1

- Pt became very sedated and slept for most of the day and evening but gradually became more alert then stood up, walked to the nurses station and said “I’m back!”

- Pt still needed po lorazepam with a final dose of 2mg TID. At lower doses would begin to feel stuck. Also needed zolpidem 5mg qhs to prevent feeling stuck first thing in the morning

- Phenomenologically, patients describe having experienced intense emotional states, often uncontrollable anxiety and overwhelming fear, ambivalence, depression, euphoria, lability, aggression and psychosis.

Northoff G. What catatonia can tell us about the top down modulation: a neuropsychiatric hypothesis. Behav Brain sci 2002 25:555-604 Perkins R. Catatonia: the ultimate response to fear? Austr NZ J psychiatry 1982, 16:282-287

IMPROVING DETECTION AND TREATMENT



IF YOU HAVE ANY SUSPICION FOR CATATONIA..

- Complete a catatonia exam!!



IF POSITIVE INITIATE TREATMENT PRONTO!

- Give lorazepam 1-2mg po and observe
- If pt responds schedule lorazepam
- If pt doesn't respond... crank up the lorazepam!
 - 1mg TID for a day
 - If no response ↑ to 2mg TID
 - If no response ↑ to 3mg TID etc..
- May need in excess of 10-20mg/24 hours

NEXT STEPS

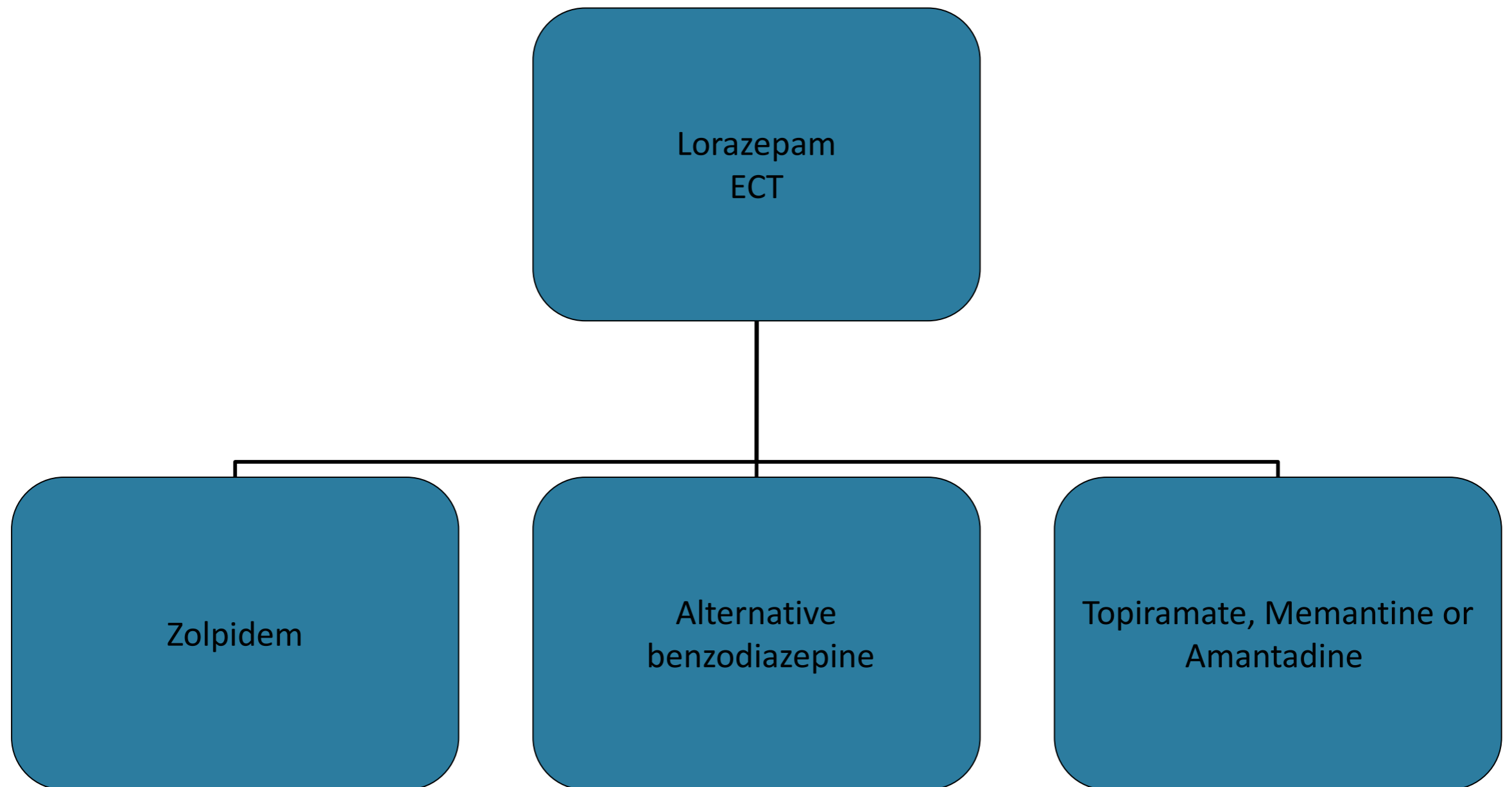
- If after 3 days of therapeutic doses a response is not seen consider trial of ECT or an alternative medication



IF LORAZEPAM IS NOT EFFECTIVE

- ECT
- Zolpidem- Give 5-10mg po. If a response is seen give scheduled Zolpidem at 5mg TID
- Alternative benzodiazapine such as diazepam
- Trial of Memantine, Amantadine, or Topiramate

TREATMENT ALGORITHM



TAKE HOME POINTS

- Catatonia is common and probably often missed
- There is an easy bedside exam to assist with diagnosis
- Effective treatments are available
- Be proactive if a patient is not responding to current treatment