Other medical illnesses masquerading as psychiatric illnesses

What could it BE?

- Disclaimer: this presentation is intended to be informative only. It is not intended to replace medical evaluation by a medical professional, nor is it powered to replace a formal medical education process.
- The goal is to further communication and the collaborative process between all participants in mental health care.

Format

I debated the format for this lecture….present by organ system, or present by symptom constellation.

I opted to create the presentation by case presentation and constellation, as that is how patients typically present to clinic, and that is how medical clinicians develop a differential diagnosis

The presentation could easily have been arranged by systems, which is how the first two years of medical school (the primarily didactic portion), and the didactics of PA and NP school are taught

Differential diagnosis

- The most reckless thing I can do in medicine is jump to a diagnostic conclusion
- Much like when a patient presents for a mental health diagnosis, I start with a broad differential—anything may be on the table.

Limits to this Presentation

- I intend to review the most common differentials. Common things present commonly.
- I will present a series of cases…and am asking you to contemplate along the way the differential diagnoses you might create
- The comment feature of Zoom will be used, so please familiarize yourself with that!

I am so tired

- Mr. tired presents with a history of depression: low energy, difficulties with concentrating, depressed mood, anhedonia, insomnia/hypersomnia
- This is a change from baseline, but insidious onset

- No precipitating event

I am so tired

- Mr. A 50'ish year old male
- BMI >35
- Looks tired
- Has no significant medical history


Differential?

My Initial Differential

- Depression
- Sleep apnea
- Thyroid disorder
- Diabetes
- Chronic pain
- Substances
- Prescription side effects
- Other psychiatric concerns

Other History

- Collateral symptoms?
- Is this new? History of depression?
- Other health concerns? Past medical and surgical history
- What medicines does he take?
- What substances does he use?
- Family history?
- Deferring on the other history items as we are focusing on the medical

Working Through My (Our) Differential

- Denies substance abuse, new medicines, or pain
- Lab: normal thyroid and blood sugar, but elevated hemoglobin/hematocrit (blood count)
- Bp high on exam

- Sleep study: Severe sleep apnea

I am so tired: ultimate diagnosis

- Severe sleep apnea

- Mood disorder, depressed type, secondary to medical condition
- Overweight

- Symptom resolution with sleep apnea treated, meal plan, appropriate weight management

Risk Factors

- Stop Bang Criteria
  - Do you snore loudly? (louder than talking or loud enough to be heard through closed doors?)
  - Do you often feel tired, fatigued, or sleepy during the daytime?
  - Has anyone observed you stop breathing during sleep?
  - Do you have (or are you being treated for) high blood pressure?
  - BMI > 35 kg/m^2
  - Age >50
  - Neck circumference >40 cm (shirt collar size 15 ½ is 39 cm; 16 is 41.5 cm)
  - Male gender

Stop Bang Scores: range 0-8

</=2	low risk of moderate to severe sleep apnea
3-4	moderate for moderate to severe sleep apnea risk; further criteria required for classification
5-8	high risk moderate to severe sleep apnea sleep apnea

Epworth scale

- No chance of dozing =0
- Slight chance of dozing =1
- Moderate chance of dozing =2
- High chance of dozing =3

Write down the number corresponding to your choice in the right hand column. Total your score below.

Situation	Chance of Dozing
Sitting and reading	•
Watching TV	•
Sitting inactive in a public place (e.g., a theater or a meeting)	•
As a passenger in a car for an hour without a break	•
Lying down to rest in the afternoon when circumstances permit	•
Sitting and talking to someone	•
Sitting quietly after a lunch without alcohol	•
In a car, while stopped for a few minutes in traffic	•

Total Score =

A Word on Weight

- Weight-based discrimination is very high
- Use people-centered language. A person with obesity, NOT an obese client
- Obesity can contribute to esteem problems and depression, but it typically will not cause depression on its own
- Approach weight management concerns respectfully, using people-first language
- Look for the medical concerns that contribute to overweight and obese states
- Weight management strategies and the understanding of weight management is evolving quickly. It's not a willpower issue or a diet-harder diet-smarter situation. Obesity is a medical illness that merits medical treatment and management, much like we manage hypertension, diabetes and so forth. IE no one is yelling at my pancreas to get with the program…

Depression-abridged differential

Endocrine: Thyroid, Adrenal (Cushings), diabetes,
Vitamin deficiency
PCOS
Chronic pain: including fibromyalgia
Sleep: Sleep apnea, insomnia
Cardiovascular: heart disease
Cancer, esp pancreatic, lung, breast cancer
Substance misuse
Prescription medicine side effects
Autoimmune illnesses: lupus, MS,
HIV
Neuro: Stroke, dementia, Parkinsons, epilepsy
Other psychiatric diagnoses

Depression

- Common things happen more commonly (hoofbeats are usually horses)
- Things that happened before often recur…
- Don’t jump to a diagnosis…if you only think it’s thyroid you may miss something else
- Don’t shotgun…develop a differential and work down it

Ms. Depressed

- 35 year old with 2 year history low grade depression with anhedonia, concentration difficulties, weight gain, sleep disturbance, “moodiness”, weak and feels leaden


Differential?

My differential

- Major depression, atypical
- Thyroid
- Dysthymia
- Autoimmune
- Anemia
- Sleep apnea

More history

- Always cold
- Weight gain but no sig change in appetite and consumption
- Thyroid numbers are with tsh 10
- TPO antibodies positive
- Diagnosis: Hashimoto’s thyroid disease
- Incidental: PCOS

Thyroid

- Is it thyroid? Check TSH. Can check t4, t3 but usually don't have to
- Reverse t3 is very rarely useful
- Thyroid AB don't have to be checked every visit…and once TPO antibodies are positive, they stay that way. No need to repeat
- Associated symptoms for low thyroid: cold intolerance, menstrual cycle irregularities, pitting edema
- Runs in families, more common in women and especially in conjunction with PCOS

Ms. Maybe Bipolar

- 23 yo female
- Presents for compliant of “bipolar disorder”
- Mood fluctuates up and down, but does not quite achieve full symptom MDD or (hypo)mania
- Has depression symptoms of anhedonia, fatigue, depression
- Has hypomania symptoms of irritability, hypersexuality, insomnia, impulsivity


Differential?

Ms. Maybe Bipolar—My differential

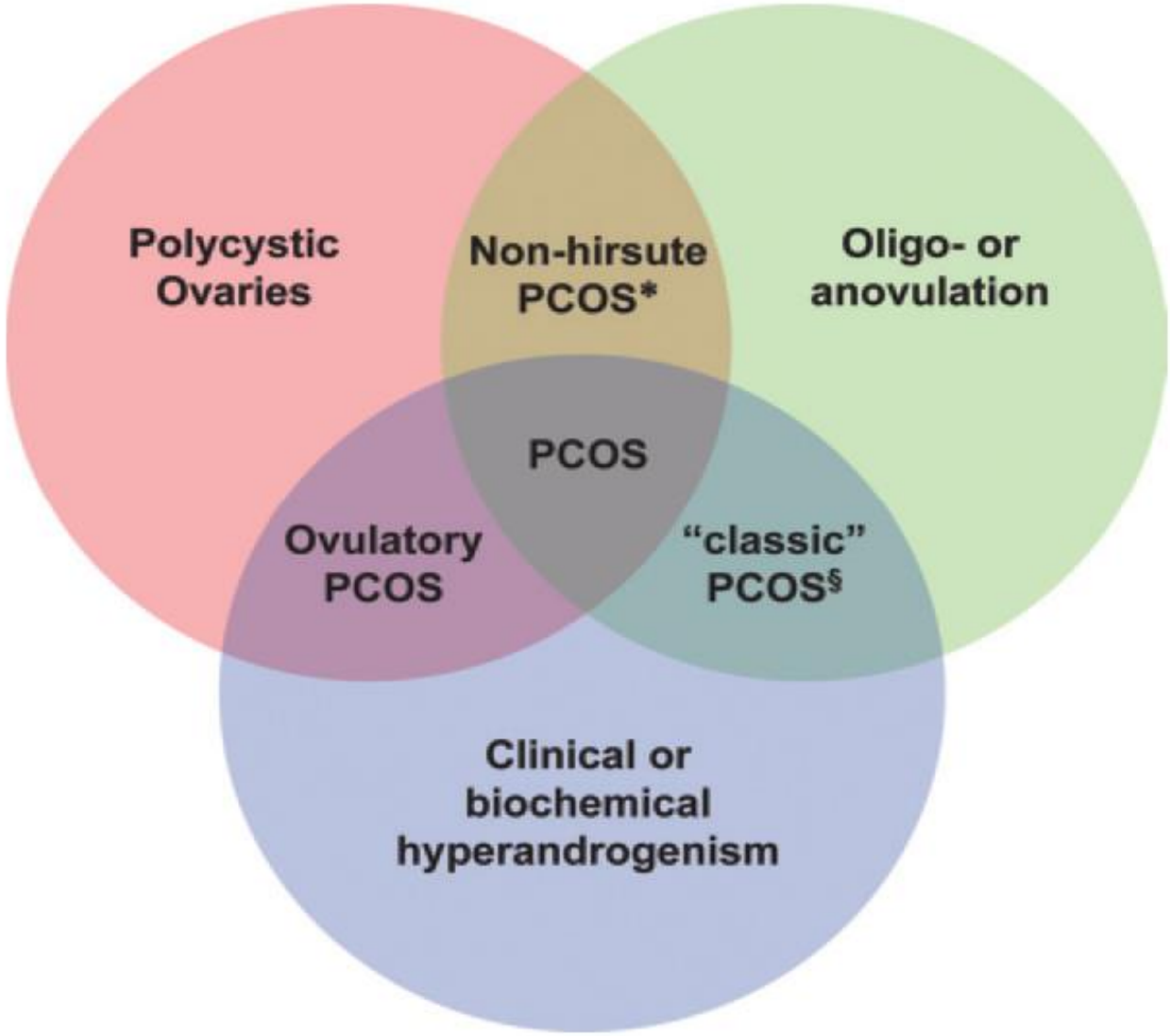
- Cyclothymia
- Thyroid disorder
- Borderline personality disorder
- ADD (significant overlap of some sx with bipolar d/o)
- PTSD (significant overlap of some sx with bipolar d/o)
- “Hormones” ? PCOS

Ms. Maybe -More History!

- Symptoms started about age 12
- Started gaining weight then as well
- Menstrual cycles irregular---and always have been
- Slightly overweight
- Significant acne

PCOS

- A little complicated; and a frequent cause of depression and "mild bipolar"
- PCOS: Stein-Leventhal triad: cysts on ovaries, metabolic disregulations and endocrinopathies
- PCOS is a disease from the brain, not from the ovaries (oophorectomy will not resolve PCOS)
- Common concerns: hyperlipidemia, hyperglycemia, hypothyroidism, elevated testosterone levels,
- Increased risk of sleep apnea, fatty liver disease, and increase inflammation in general
- Fairly common @ 6-12 percent of US



Criteria for PCOS

Evaluate for PCOS

- May have elevated testosterone, LH, possible elevated estradiol
- Fatty liver disease (elevated liver enzymes)… the trick on this is: alt>ast is usually not do to alcohol; ast>alt is more indicative of alcohol-related hepatitis
- Also causes thyroid abnormalities, insulin resistance
- Treating PCOS treats much of the mood concern, though PCOS is a high-inflammation state and often co-exists with mood disorders

Ms. Allergic to Serotonin

- 26 year old female patient
- Treatment refractory depression
- Agitation to Prozac, Cymbalta, twitchy to Effexor XR
- “allergic to serotonin medicines” vs “bipolar”


Differential?

My differential

- Treatment refractory depression
- Bipolar disorder
- Induction-related anxiety
- Personality disorder “the patient who is ‘allergic’ to everything”
- Some other factor causing medicines to not work correctly

Lets talk about SSRI's and bipolar d/o

- SSRI's do have a high risk of aggravating bipolar d/o and causing rapid cycling
- The faster a bipolar patient is cycling, typically the worse off they are
- Serotonin meds should typically NOT be used for bipolar d/o, with a few exceptions

Ms. Allergic to Serotonin Continued

- History is compelling for major depression
- Exploring medicine history shows these are the only antidepressants she has tried; she has not tried Zoloft, Lexapro, Pristiq, Viibryd, Wellbutrin, Luvox etc

- All of the antidepressants have a common feature: they metabolize through cyp4502d6

What is genetic testing

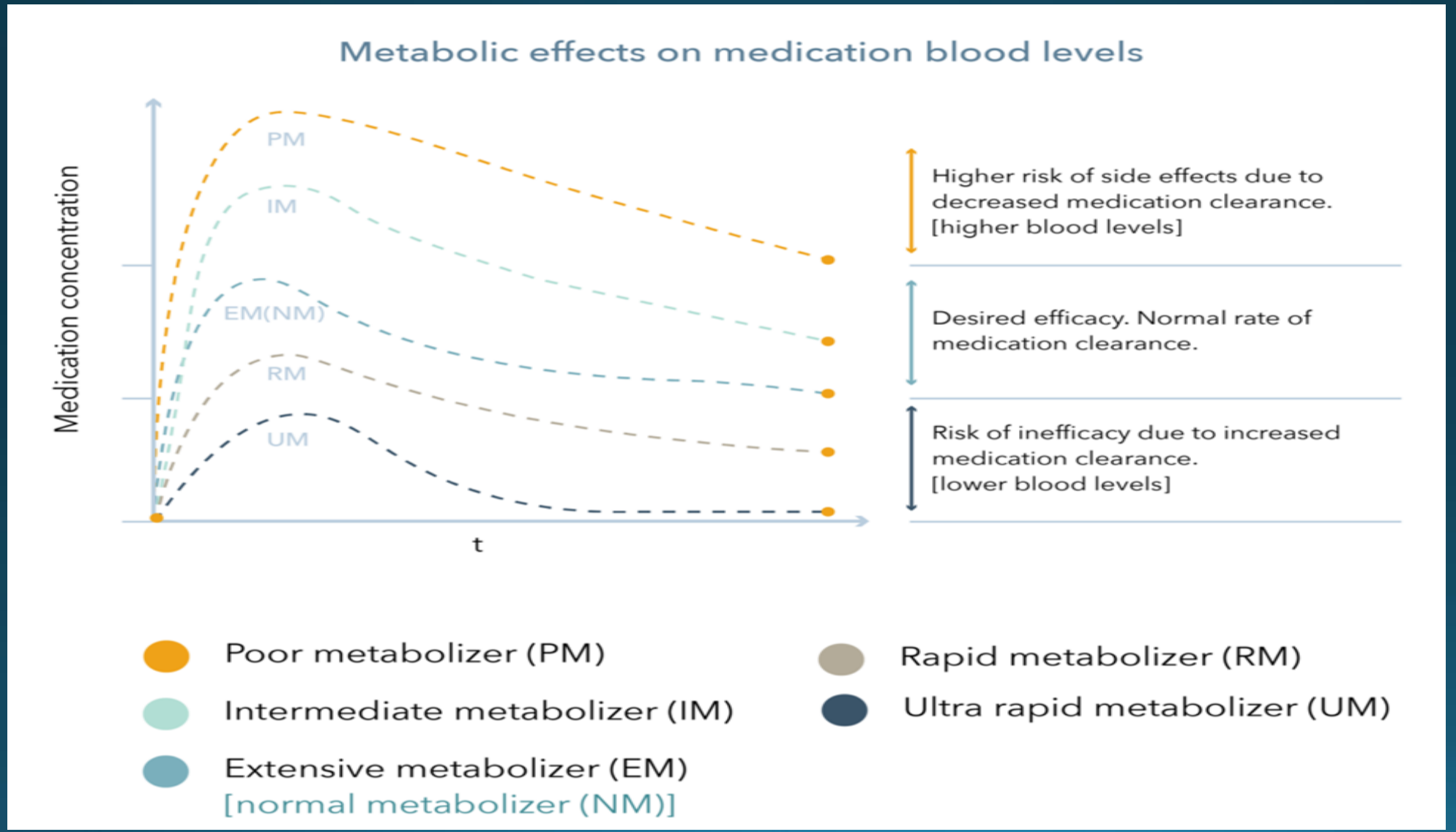
IT IS NOT

- Testing that will tell exactly what a patient has
- Testing that will show exactly what medicines will work

What is genetic testing

- Genetic testing primarily indicates what medicines are effectively metabolized
- Genetic testing can reveal susceptibility to medicine side effects, primarily due to metabolization that is too rapid or too slow

Some janky pharmacokinetics



CYP chart, abbreviated

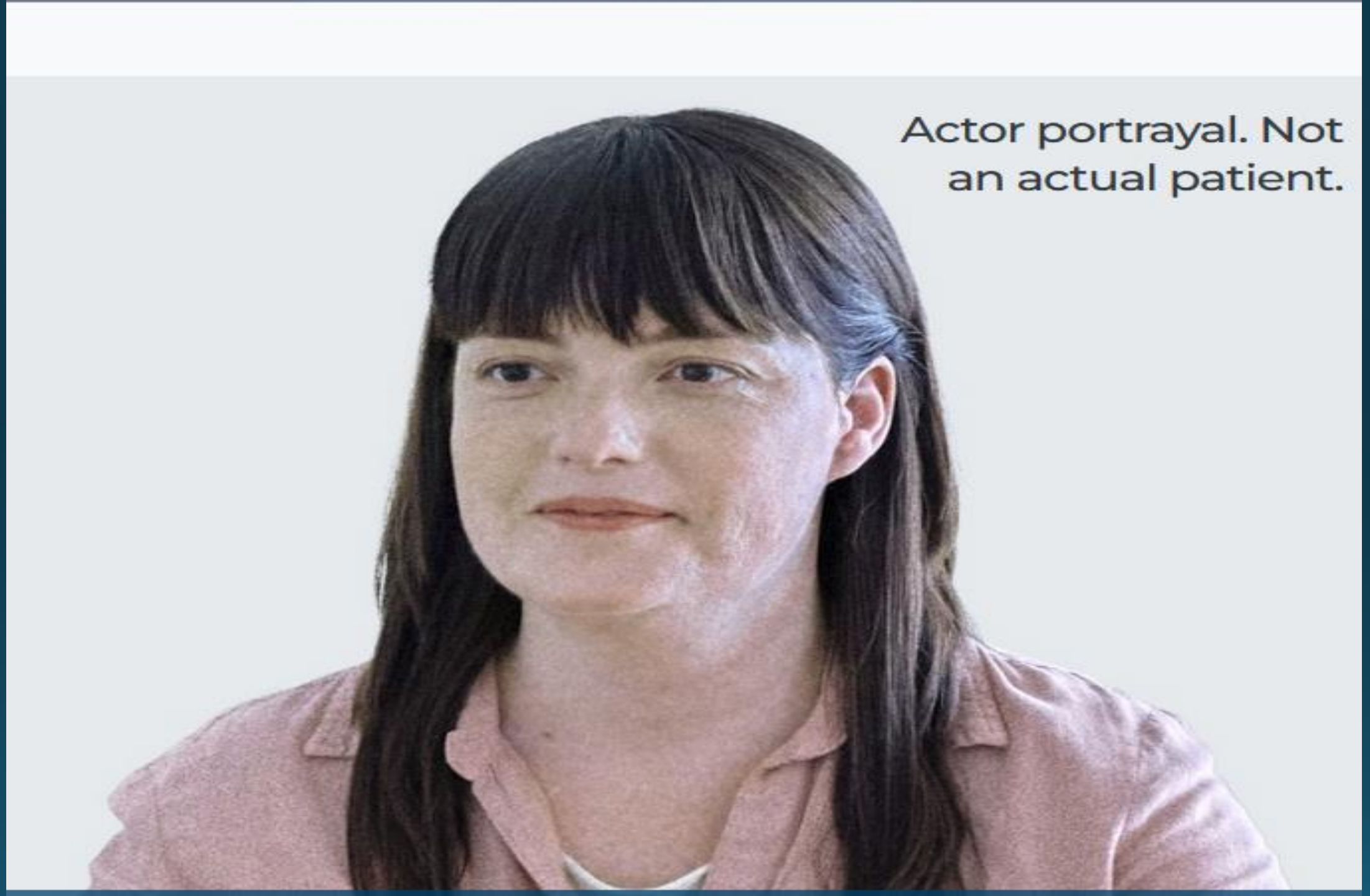
	2D6	2C19	3A4	1A2
Medicines	Prozac, Paxil, Effexor, Cymbalta, several TCAs (Prozac and Paxil also inhibit 2d6), some antipsychotics (like Abilify…remember this…)	Zoloft, Celexa, Lexapro, several TCA's	Dekapote, Tegretol, Lamictal, Birth Control, Nuvigil/Provigil, Methadone	Luvox, caffeine, some TCA's

Ms. Allergic to Serotonin, Continued

- Offered option of an empiric trial of a 2c19 med
- Genetic testing
- Interventional
- Elected trial of Zoloft; was successful (lucky; could have also had a broken 2c19)

Mrs. Used to be Happy

- 56 year old female with treatment resistant atypical depression
- Has twenty-year history of depression that previously responded to Zoloft augmented with abilify 2 mg
- Switched to Prozac instead of Zoloft for weight loss and got much worse; switched back to Zoloft two weeks ago but not better
- Very low energy, anhedonia, very flat


Actor portrayal. Not
an actual patient.

- Differential?

My differential

- Depression
- Metabolic disorder like thyroid
- Dementia (a little young)
- Sleep apnea
- Autoimmune disorder (right age)
- Side effect to medicine

Sometimes it's the things we do to people

- Moving Zoloft to Prozac caused an interaction between Prozac and Abilify

- Patient has medication-induced dose-related EPS

Remember the CYP chart?

	Cyp 2d6
medicines	Prozac, Abilify (and Prozac also inhibits 2d6)

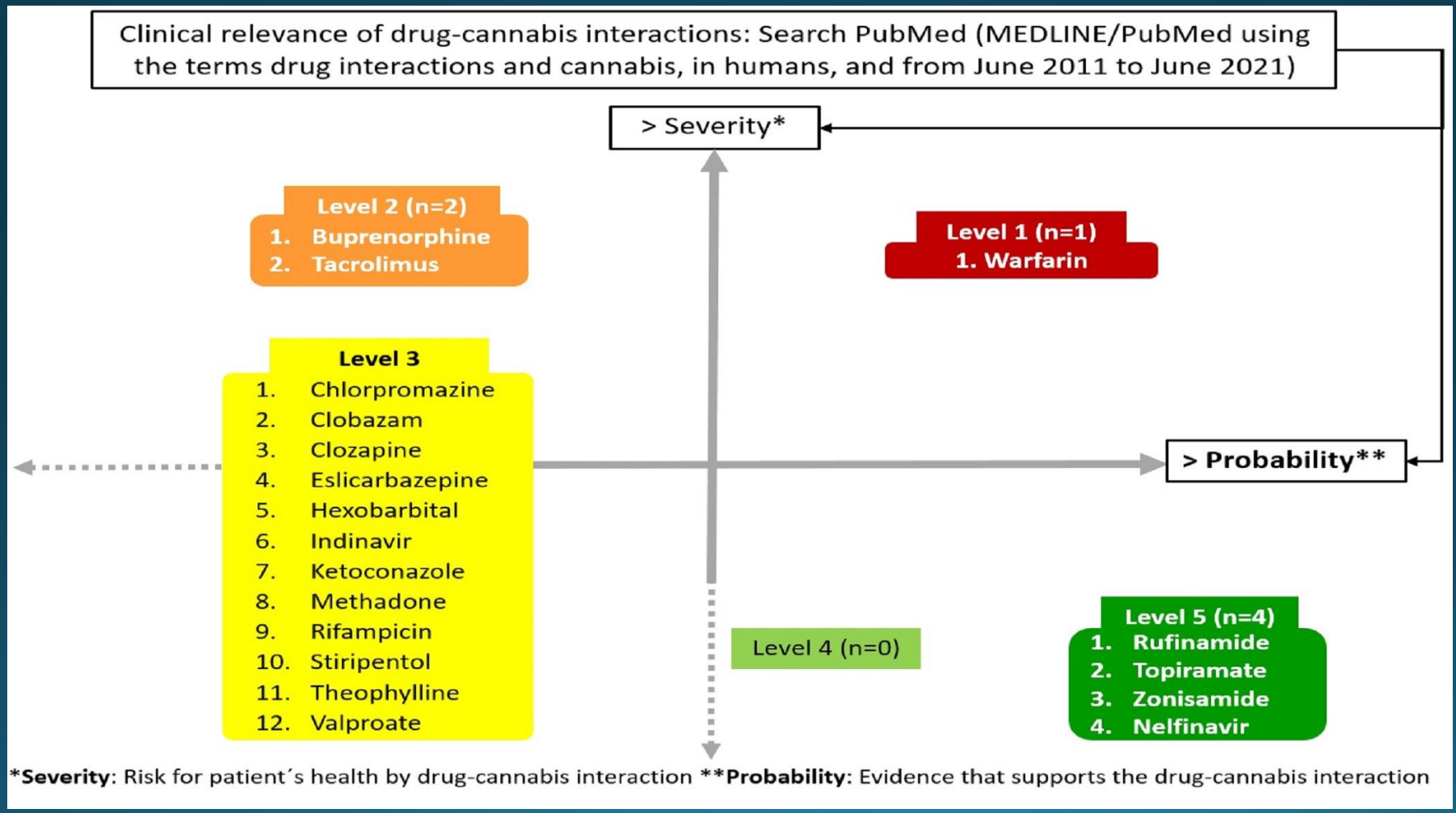
Prozac

- Metabolized by 2d6
- Inhibits 2d6
- Plays dirty
- Very long ½ life; that's why when the switch back to Zoloft occurred; it did not have time to improve yet
- Stopped Abilify, augmented with Lamictal instead to avoid any EPS; resolution

EPS primer

EPS	Onset	Treatment
Parkinsonianism	Within first 3 months	Lower dose or change antipsychotic
Dystonia	Within 3-5 days	Stop agent, benzos or Cogentin
Akathisia (this often presents as "new onset" or "worsening" anxiety after starting an antipsychotic	Within first 2 weeks	Propranolol, benzos
Tardive Dyskinesia	3 months and on	Reduce or stop medicine, newer agents to treat

Even natural substances are often processed by CYP enzymes and cause interactions



Ms. Up all night

- 16 year old with insomnia, restless sleep
- Toss/turns at night and cannot fall asleep nor stay asleep
- Very tired the next day
- Good sleep hygiene (so obviously not one of my kids)


Differential?

My differential

- Anxiety
- Primary insomnia
- Depression
- RLS
- Narcolepsy
- Sleep apnea
- Something else?

LAB—because she looked a little pale

- Cbc-slightly low with microcytic (MCV---small red blood cells)
- Ferritin-3
- Dx: iron deficient anemia
- AND RLS due to iron deficiency

RLS

- Can be RLS of its own right
- Low iron levels increase risk for RLS symptoms
- Iron replacement was the treatment
- *****big big note: don't just replace iron if you don't know the cause of the anemia, especially in men and post-menopausal women…you can miss something BAD, like cancer

Mr. Moody

- 27 year old with gradually progressing cycling of mood
- Mood swings that could happen rapidly, angry outbursts, tearfulness
- Sleep ? Off somewhat


Differential?

My differential

- Bipolar disorder
- Major depression
- Sleep apnea
- Overreplacement of testosterone
- Personality disorder
- Impulse control disorder
- PTSD

Some more history

- Patient used to play tackle football
- He also served in the military

CTE/pseudobulbar

- Often mistaken for bipolar disorder
- Differences: really tough to tease out. Look for a history of head injuries, especially recurrent, and especially in adolescence (though CTE can occur due to later trauma as well.)
- Many athletic agencies, recognizing this more vulnerable window, have limited the age for potential head injuries (ie tackle football, heading in soccer)
- Parkinsonianism symptoms, preponderance for headaches make the diagnosis easier but are not required

Safinia: Journal of vascular interventional neurology, October 2016

Disease	Clinical Features		Pathological Features					
	Onset and progression	Signs and symptoms	Gross findings	Pattern of distribution of pathologic markers	Types of cells with inclusions	Other abnormalities	Phospho-Tau abnormalities	TDP-43 abnormalities
CTE	8-10 years after multiple concussions, slowly progressive	Headache, cognitive, motor, and/or parkinsonian signs; mood, behavioral changes, pseudobulbar affect	Cavum or fenestrated septum pellucidum, enlargement of the lateral and third ventricles, atrophy in the frontal and temporal lobes, mammillary body atrophy, and thinning of the hypothalamic floor and corpus callosum	Superficial cortex (layers II and III). Depths of sulci, focal/patchy, densely clustered NFTs; mainly frontal and temporal; Multifocal axonal varicosities in cortex and subcortical white matter; frontal>temporal>deep structures	Neurons and astrocytes	Neuropil threads and neuropil neurites (often perivascular); extracellular amyloid gyral depths common	3 repeat and 4 repeat tau	TDP-43 in the frontal and temporal cortices, basal ganglia, diencephalon, and brainstem
CTE Mimics								
AD	No significant trauma, early memory impairment	Memory, cognition, behavioral changes often later in disease progression	Mesial temporal and diffuse cortical atrophy	Evenly distributed NFTs (layers III and V); hippocampal>limbic>isocortical Braak stages	neurons	Extracellular amyloid deposits; neuritic plaques, evenly distributed neuropil threads	3 repeat and 4 repeat tau	Sometimes, hippocampal
PCS	Acute onset after isolated trauma, may be persistent, not progressive	Headache, memory, reduced concentration, personality changes, and depressive behavior	Brain often anatomically normal with standard neuroimaging, microhemorrhages, diffusion tensor imaging abnormalities	Few neuropathological studies; diffuse axonal injury, perivascular pigmented macrophages	None defined	Possible association with microstructural white matter damage (increases in diffusivity and reduced anisotropic diffusion)	unknown	unknown
FTD	No significant trauma, rapid progression	Cognition, personality, behavioral changes	Frontotemporal atrophy	Predominantly frontal and temporal lobes	neurons	Depends on subtype	Yes, 3 repeat or 4 repeat depending on subtype of FTD	Yes, depending on subtype of FTD, often ubiquitin positive
Parkinson's Disease	No significant trauma, gradual progression	Hypokinetic, mask-like facies, tremor, cogwheel rigidity, hallucinations secondary to dopamine treatment	Loss of pigmented neurons in brainstem	Lewy bodies and α-synuclein pathology; brainstem>limbic>cortex	α-synuclein in neurons and neuronal processes	Overlapping AD pathology common	Minor, associated with overlapping AD pathology	uncommon
Psychiatric disease	No significant trauma	Behavioral changes, depression	Brain anatomically normal	No diagnostic microscopic abnormalities	None defined	None defined	no	no
Vascular dementia	Stepwise progression of symptoms	Focal neurologic deficits	Focal infarction	May be focal, multi-infarct, or microvascular	None defined	Infarcts	no	no

Abbreviations: AD = Alzheimer's disease; CTE = Chronic traumatic encephalopathy; FTD = Frontotemporal dementia; NFTs = neurofibrillary tangles; PCS = post-concussive syndrome; TDP = TAR DNA binding protein

Treatment

- There is not great treatment for CTE
- Treatment is primarily symptomatic
- May use nudextra to treat pseudobulbar affect if that is present
- Mood stabilizers (?Tegretol, Lamotrigine, Depakote) for mood lability
- Progressive illness

Ms. Not in Focus

- Evaluate for inattentive attention deficit disorder, age 10
- Zones out in class, trouble staying focused, disorganized and forgetful, does not follow through, forgets to follow through on things, does not appear to be listening even when spoken to directly, easily distracted
- From childhood in multiple settings


Differential?

My differential

- ADD
- Mood disorder
- Anxiety disorder
- BORED
- Neurologic

ADD testing

- Fails Connors
- Zoning out in exam

However, stops walking, stops talking midsentence

diagnosis

- EEG confirms absence seizures
- This is tough distinction, but
  - Folks with ADD will do things until they lose focus
  - Folks with absence seizures will stop abruptly midsentence, mid walking etc
  - Folks with absence seizures don’t lose consciousness, body posture etc

Patient “I feel so sick”

- 23 yo previous responder to Zoloft for a few years
- Presents for worsening anxiety, which has precipitously gotten worse over past week
- Insomnia, anxiety, racing heart, feels “twitchy”

- In office: agitated, restless, “twitchy”


Differential?

My differential

- Anxiety
- Medication interaction
- Severe anemia
- This girl looks toxic…looks toxic usually is toxic

More history

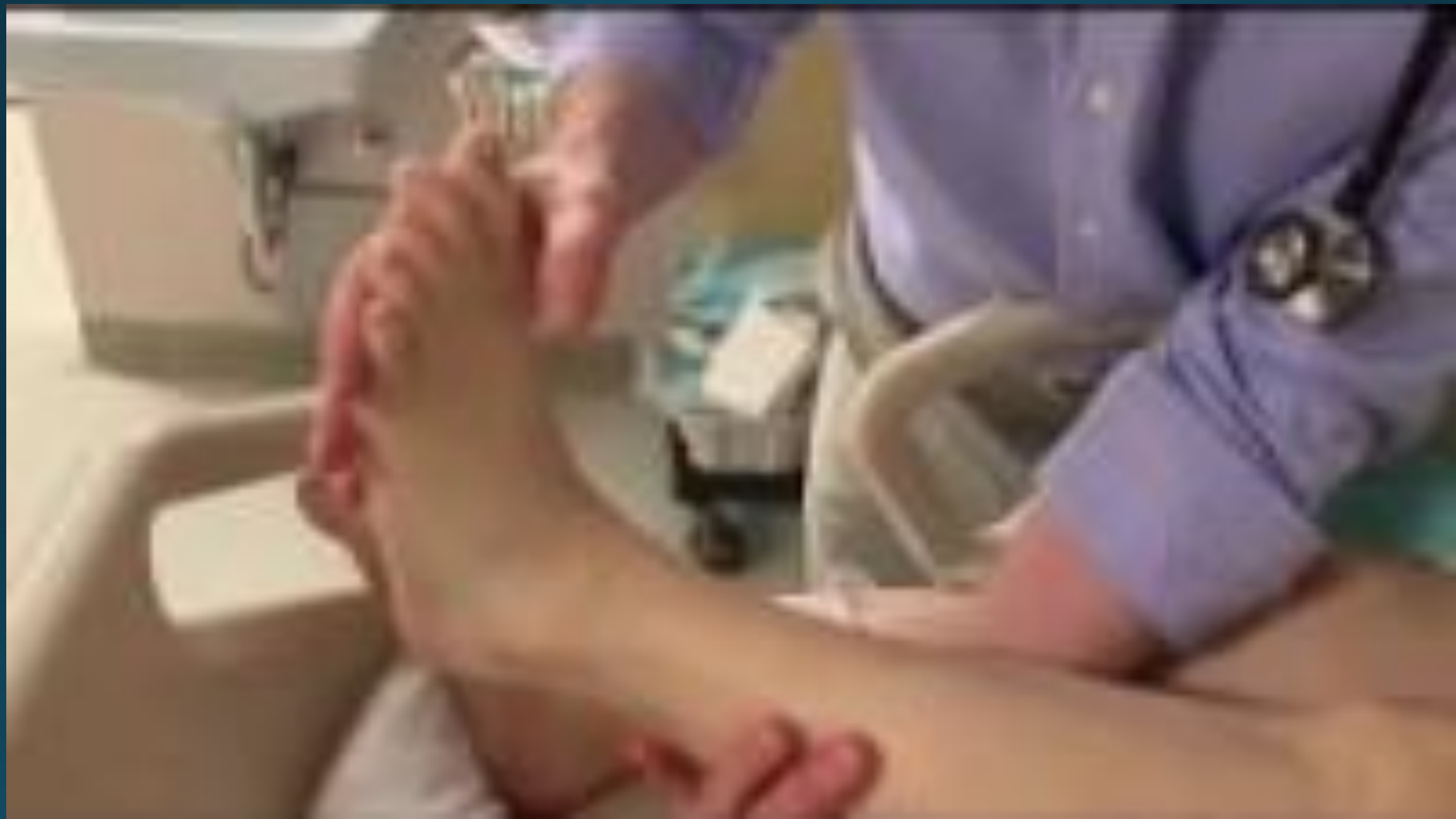
- Patient has intermittently recurring pneumonia due to asthma
- Treated recently with Zyvox
- Serotonin syndrome

Serotonin Syndrome

- Exam—brisk reflexes—did not even need a hammer
- Saw this and called an ambulance (she had driven herself to apt)
- Untreated can lead to seizures, system collapse and death
- Moderate to severe—needs hospital with ICU capacity
- This patient was in the ICU for several days ☹

Serotonin syndrome

Serotonin toxicity	Neuro-muscular	Autonomic	Mental state
Severe	Respiratory failure Rigidity	Severe hyperthermia	Low GCS Confusion
Moderate	Sustained clonus Opsoclonus Myoclonus Tremor	Hyperthermia (<38.5 C) Mydriasis Diaphoresis Flushing	agitation
Mild	Hyper-reflexia Inducible clonus	Tachycardia hypertension	Anxiety
Common drug side effects	Brisk reflexes	Diarrhea Nausea	insomnia



Patient also bipolar

- 54 yo male
- New onset “bipolar disorder”
- Impulsivity, hypersexuality, spending sprees, inappropriate impulsive behavior


Differential?

differential

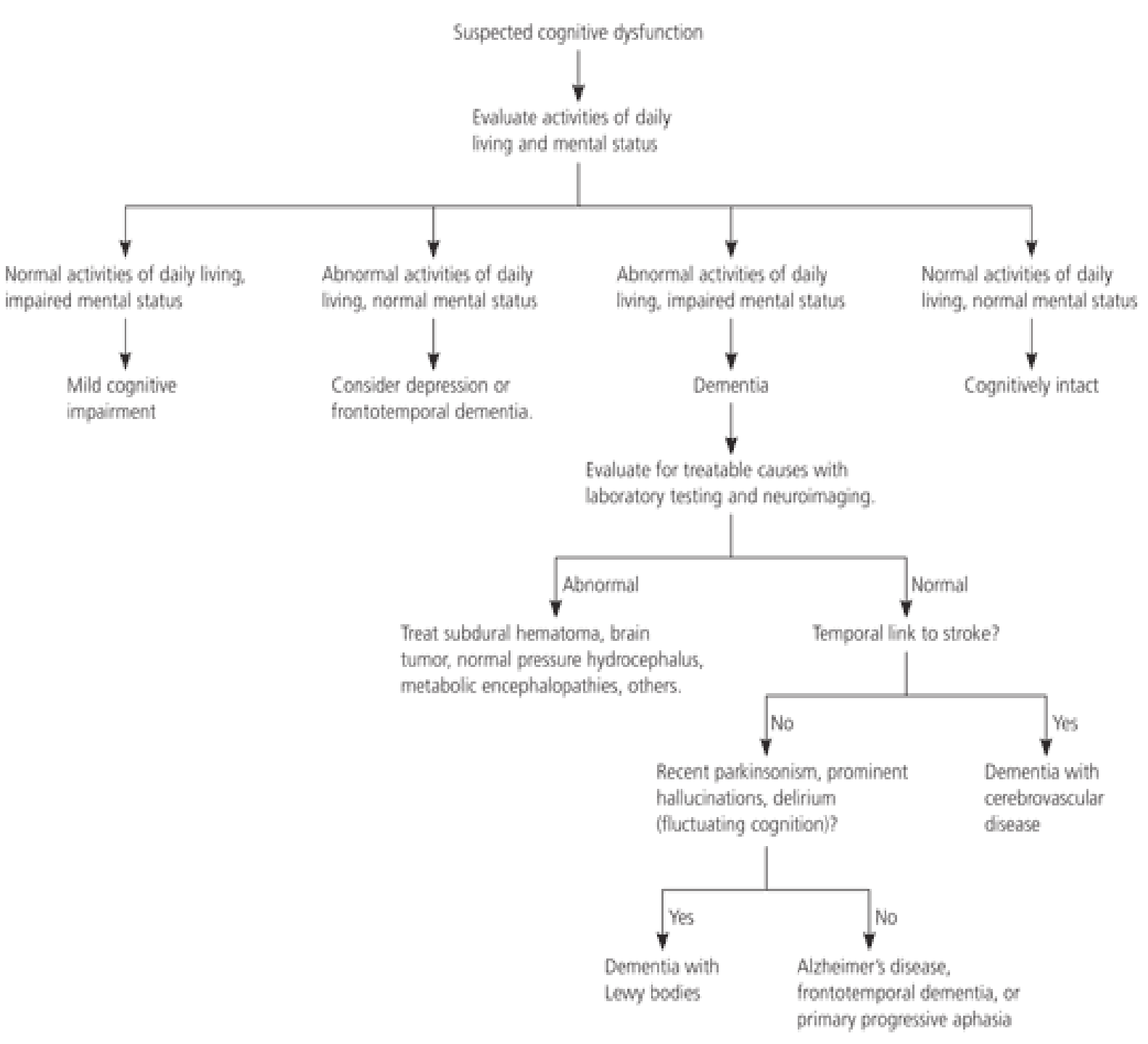
- Bipolar disorder? Very unlikely new onset in this age group
- Stroke
- Substance abuse
- Dementia? Kind of young?
- Encephalopathy?

Additional history

- High impulsivity
- Low insight
- Decline in hygiene and self-care

Dementia types

	Alzheimer's disease	Vascular dementia	Frontotemporal dementia	Lewy Body Dementia	Other
Prevalence	60-70%	10-20%	10%	5%	5%
Characterized by	Amyloid plaques, beta tangles	Disease or injury to the blood vessels leading to the brain	Deterioration of frontal and temporal lobes of the brain	Lewy body protein deposits on nerve cells	Varies depending on the etiology
Symptoms include	Impairments to memory, language and visuospatial skills	Impaired motor skills and judgement	Personality changes and issues with language	Hallucinations, disordered sleep, impaired thinking and motor skills	varies


Suspected cognitive dysfunction
Evaluate activities of daily living and mental status
Normal activities of daily living, impaired mental status
Abnormal activities of daily living, normal mental status
Abnormal activities of daily living, impaired mental status
Normal activities of daily living, normal mental status
Mild cognitive impairment
Consider depression or frontotemporal dementia.
Dementia
Cognitively intact
Evaluate for treatable causes with laboratory testing and neuroimaging.
Abnormal
Normal
Treat subdural hematoma, brain tumor, normal pressure hydrocephalus, metabolic encephalopathies, others.
Temporal link to stroke?
No
Yes
Recent parkinsonism, prominent hallucinations, delirium (fluctuating cognition)?
Dementia with cerebrovascular disease
Yes
No
Dementia with Lewy bodies
Alzheimer's disease, frontotemporal dementia, or primary progressive aphasia

Mrs. Dementia

- 75 year old previously healthy, lost spouse recently
- Gradual progression of dysthymic depression, and worsening memory as a primary concern
- She is worried about dementia
- Referred for atypical depression with pseudodementia


Differential?

My differential

- Atypical depression
- Complicated grief
- Dementia
- Head injury
- Metabolic disorder
- Vitamin deficiency
- Anemia
- New medicines?

Sometimes it is what we do to ourselves

- Insomnia ensued after loss of spouse
- Self-treated with over the counter Benedryl
- Benedryl is kryptonite, especially for the over 60’ish crew due to robust anti-cholinergic burden

Medicines including over the counters

- Even used as prescribed can cause depression
- Benedryl —I hate benedryl—depression, confusion, cognitive suppression, likely Alzheimer's risk when used long term
- Benzodiazipines, especially long acting or regularly used (becoming clear now that these are contributing to dementia risk as well)
- Some blood pressure medicines

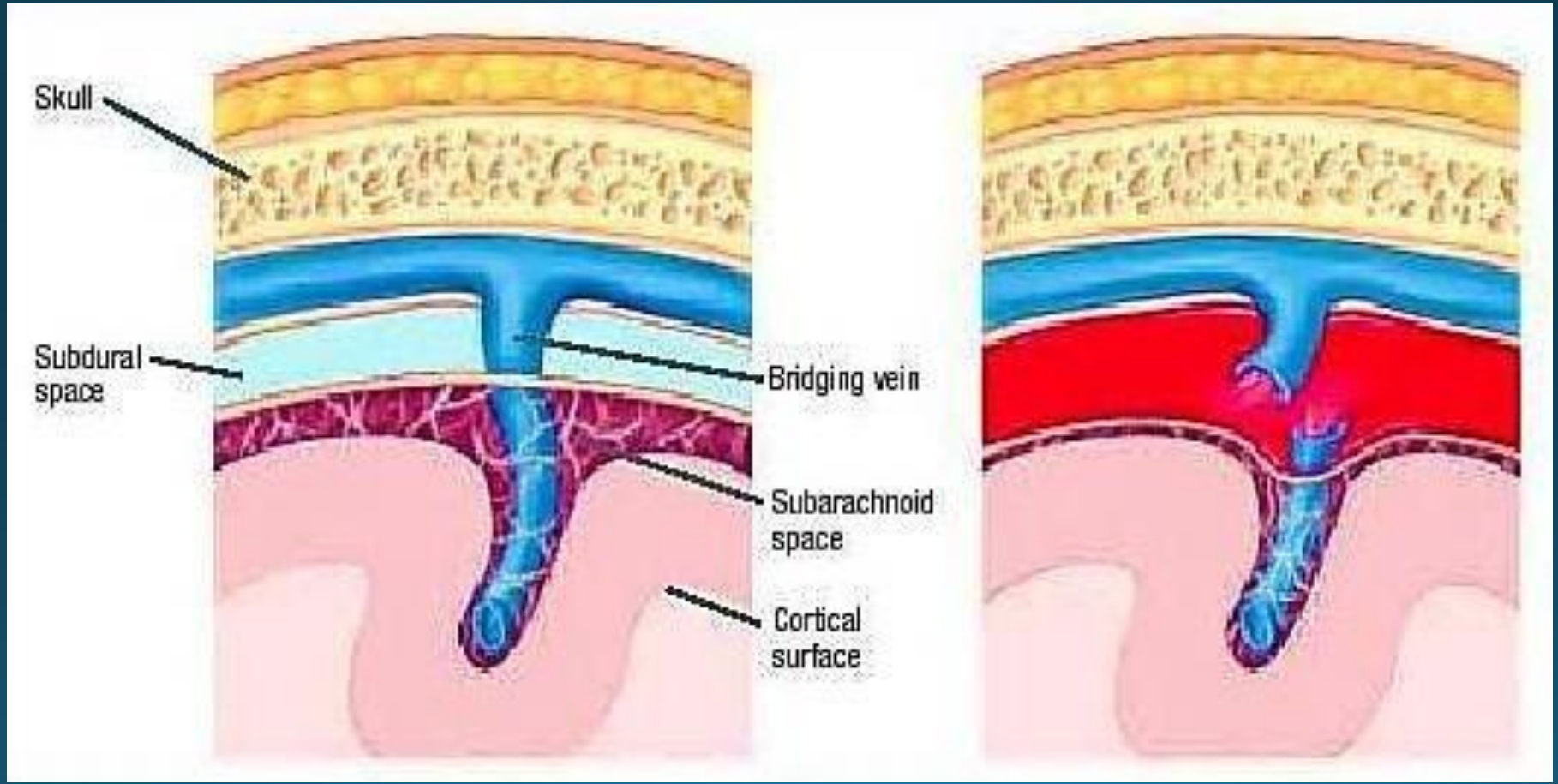
Pocket Guide to High-Risk Medications in the Elderly

Class Description	Medication to avoid[1,2]	Formulary Alternatives[3]
Alpha Agonists, Central	Guanabenz, Guanfacine, Methyldopa, Reserpine (>0.1mg/day)	Clonidine (not recommended as first line agent for treatment of hypertension)
Analgesics, Non-COX-selective NSAIDs	Indomethacin, Ketorolac	Meloxicam, Tramadol, Naproxen, Sulindac, Etodalac, Diclofenac
Antidepressants, Tricyclic	Amitriptyline, Clomipramine, Doxepin (doses > 6 mg/day), Imipramine, Trimipramine	**Depression:** SSRIs, SNRIs, Mirtazapine, Bupropion, Nortriptyline **Insomnia:** Short term use of non-benzodiazepine hypnotics (<90 days/year), Trazodone (low-dose 50mg]), Rozerem, Silenor (Doxepin ≤6mg /day), Melatonin **Neuropathic Pain:** Gabapentin, Lyrica
Antihistamines, First-Generation	Brompheniramine, Carbinoxamine, Chlorpheniramine, Clemastine, Cyproheptadine, Dexchlorpheniramine, Diphenhydramine (oral), Doxylamine, Hydroxyzine, Promethazine, Tiprolidine	**Pruritus/urticaria:** Cetirizine, Levocetirizine, Dexamethasone, Hydrocortisone **Insomnia:** Short term use of non-benzodiazepine hypnotics **(<90 days/year),** Trazodone (low-dose [50mg]), Rozerem, Silenor (Doxepin ≤6mg /day), Melatonin **Nausea/Vomiting:** Ondansetron, Prochlorperazine, Granisetron **Allergic Rhinitis:** Cetirizine, Levocetirizine, Azelastine Nasal, Olopatadine Nasal (Patanase) **Anxiety:** Buspirone, Fluvoxamine, Alprazolam, Lorazepam
Anti-infective	Nitrofurantoin **(when >90 day supply**, cumulatively)	Ciprofloxacin, Cephalexin, SMZ/TMP, Methenamine hippurate, Trimethoprim
Anti-Parkinson Agents	Benztropine (oral), Trihexyphenidyl	Amantadine, Ropinirole, Pramipexole
Antipsychotics, First-Generation	Thioridazine, Mesoridazine	Olanzapine, Quetiapine, Risperidone
Anti-thrombotic Agents	Ticlopidine, Dipyridamole (oral short-acting, does not apply to extended-release combo with aspirin)	Clopidogrel, Effient, Aspirin, Aggrenox
Barbiturates	Amobarbital, Butabarbital, Butalbital, Mephobarbital, Pentobarbital, Phenobarbital, SecoBarbital	**Anxiety:** Buspirone, Fluvoxamine, Alprazolam, Lorazepam **Insomnia:** Short term use of non-benzodiazepine hypnotics **(<90 days/year),** Trazodone [low-dose (50mg)], Rozerem, Silenor (Doxepin ≤6mg/day)
Calcium Channel Blockers	Nifedipine, immediate release	Nifedipine SR, Felodipine SR

Generic | Brand | OTC

When older folks hit their heads:

why it is more devastating



Take-away

- Patient with sudden changes; be sure to take a medicine history!

Patient I see things

- 19 year old college student presents for continued management of "schizophrenia"
- Sees things and also sometimes hears things that are not there
- Causes considerable distress
- Antipsychotic is not effectively treating her symptoms but is causing a lot of weight gain


Differential?

My Differential

- Schizophrenia-very well treated
- Other psychotic disorder
- Wilson's disease?
- Something else?

More History

- The hallucinations ONLY happen when she is trying to sleep…
- I felt that racial bias played a lot into this failed diagnosis and that a thorough history was not taken for this specific patient

Diagnosis

- Hypnogogia
- Hypnopompic hallucinations—as you are "popping" out of bed
- Hypnogogic hallucinations—as you are "going" to sleep
- May be related to underlying medical conditions…but NOT related to psychosis and antipsychotic is not warranted
- Psychoeducation and improved sleep hygiene

Thoughts on hallucinations

- Hypnogogic/hypnopompic hallucinations are typically visual
- Visual and olfactory hallucinations are often found to be medically-based

Patient I'm Depressed Again

- 44 yo female presented to clinic
- 20 year history of bipolar disorder
- Has taken lithium for the last 10 years with success
- Recent new onset of: fatigue, depression, constipation, upset stomach, nausea, headaches and muscle aches


Differential?

My differential

- Worsening depression/mood disorder
- Thyroid
- Kidney dysfunction
- Other medicine—impacting lithium level
- Lithium imbalance
- Electrolyte disturbance—hyponatremia, hypercalcemia
- Other lab abnormality

More information

- Thyroid normal
- Lithium level normal
- Kidney function normal
- Maybe a side effect of lithium, but lithium usually causes diarrhea and this is new constipation

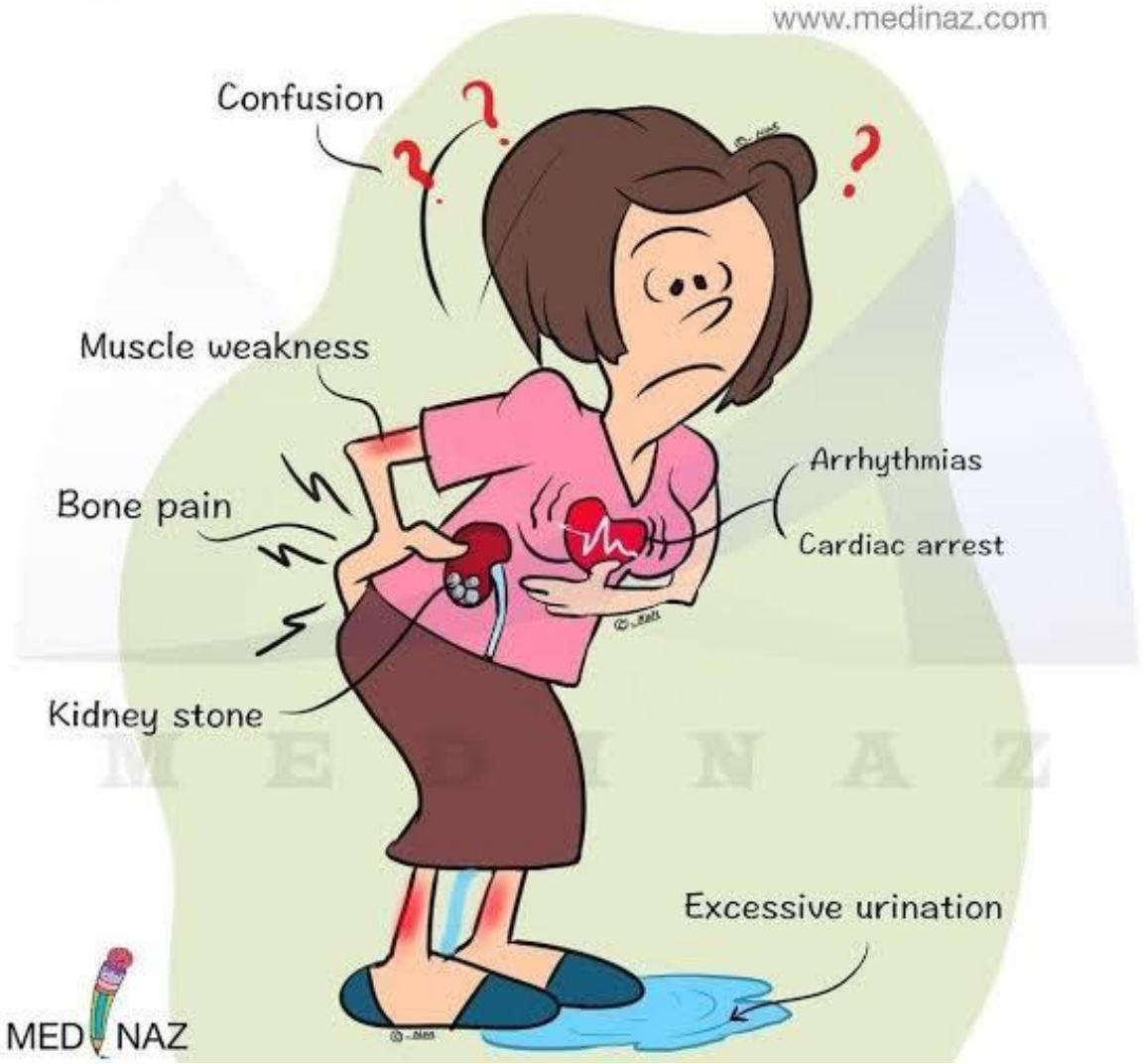
Lithium continued

- Could be new onset of depression breaking through lithium
- But before we go there…
- Muscle aches…leaden feeling is symptomatic of atypical depression (which is the most common type of depression in bipolar)
- Muscle ACHES in this constellation of symptoms in patients taking Lithium is c/w hypercalcemia

Hypercalcemia

- Previously underdiagnosed in patients taking lithium
- 25% of patients taking lithium will develop some level of hypercalcemia
- For reference, incidence of renal insuffiency is between 10 and 35%
- Incidence of hypothyroidism 10-50%

Hypercalcemia signs & symptoms



Ongoing Monitoring

Lithium levels

Thyroid

Electrolytes

Estimated GFR

Every 4–6 months (more often in the elderly and in renal impairment)

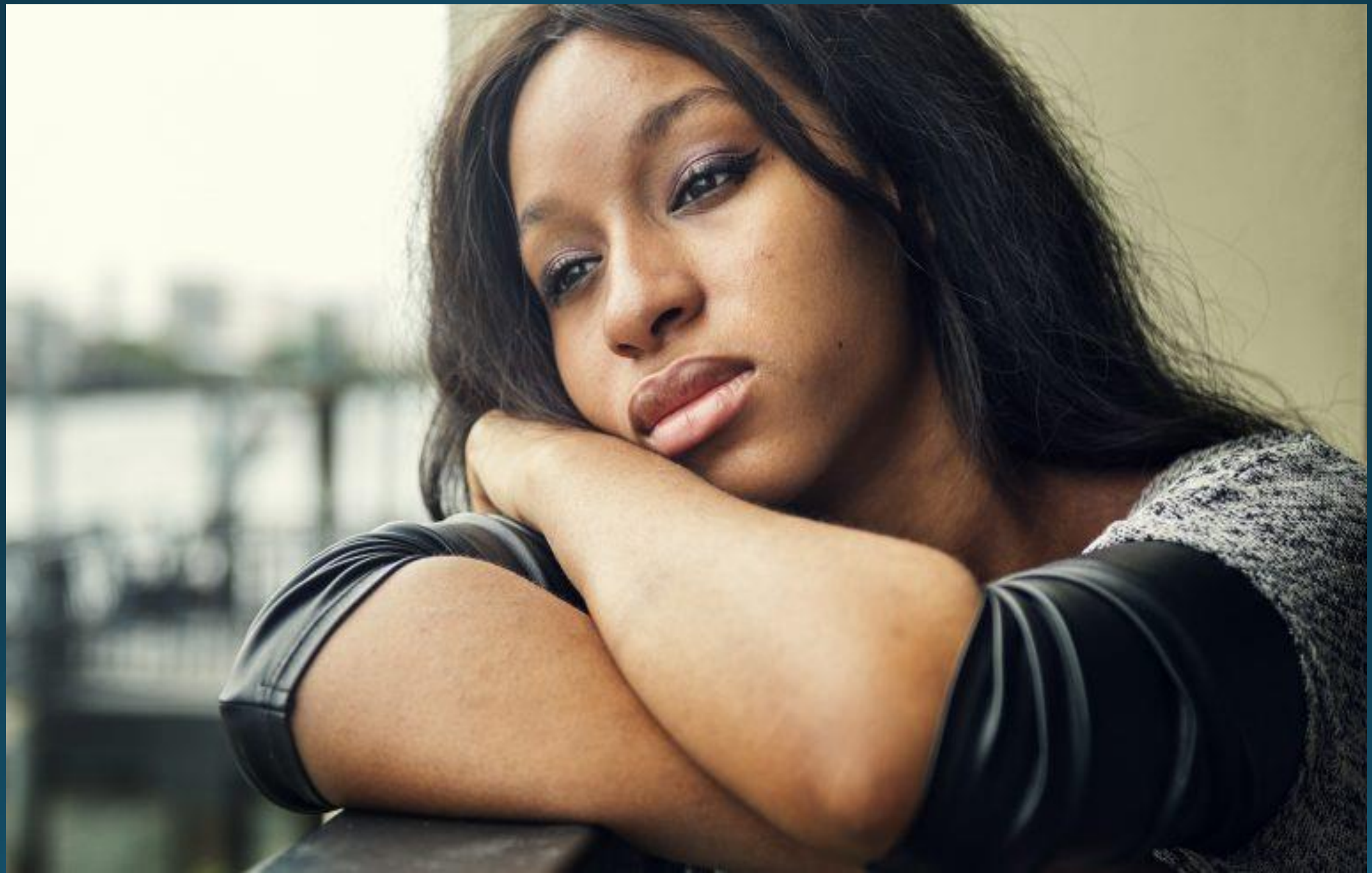
Agents Affecting Lithium Levels

Lithium Increased	Lithium Not Changed	Lithium Decreased
Thiazides	Amiloride (?)	Acetazolamide
NSAIDs	Furosemide	Mannitol
ACE inhibitors	Sulindac	Theophylline
Angiotensin II receptor antagonists	Aspirin	Caffeine
Metronidazole		Mania
Low sodium diet		Pregnancy
Dehydration		
Elderly		
Renal disease		

Dunner, D. L. (2003). ASCP Model Psychopharmacology Curriculum, volumes 1 and 2. American Journal of Psychiatry, 160(6), 1199-1200

Patient No More Go

- 42 year old with newer onset atypical depression
- Very low energy, not necessarily anhedonic, mildly depressed but more exhausted, feels leaden
- Gradual onset over period of 1-2 years
- No significant anxiety or other symptoms except disrupted sleep




Differential?

My differential

- Major depression, atypical
- Thyroid disorder
- Vitamin deficiency
- Perimenopause?
- Something else

More history

- This patient had significant aches, and the aches disrupted the sleep
- Specifically JOINT pain
- SED/CRP rates were greatly elevated

Autoimmune Illnesses

- I thought this would be Rheumatoid arthritis but patient actually had ankylosing spondylitis
- Her JOINTS hurt…it's not just that she feels leaden, or heavy, or that she in general feels achy…

Types of Arthritis	Signs & Symptoms	Causes & Risk Factors
Osteoarthritis. This is the most common type.	• Joint pain and stiffness in the hands, knees, ankles, etc. • Finger joints with knobby growths. • Swollen joints (sometimes).	• Wear and tear on joints. • Injuries and overuse of joint(s). • Being overweight. • Family history of the disease.
Rheumatoid Arthritis (RA). This is the most disabling type. The joints, as well as, the lungs, eyes, spleen, skin, and heart may be affected.	• Morning stiffness that lasts longer than an hour. • Swelling in 3 or more joints. • Swelling of the same joints on both sides of the body, such as both knees or both wrists. • Joint tenderness, warmth, or redness.	The exact cause is not known. It may be due to a fault in the immune system that causes the body to attack its own cells. Risk factors include: • Chronic swelling of the membranes that line the joints. • Family history of the disease.
Gout. This is most common in men over age 30. In women, it usually occurs after menopause.	• Sudden, intense pain in a joint, often in the big toe. • Swollen joint. • The joint area is red or purple in color, feels warm, and is tender to the touch. An attack can last hours to days.	Gout occurs when crystals from high blood levels of a body waste product (uric acid) form in the joints. The body's immune system treats these crystals like a foreign substance.
Ankylosing Spondylitis. This type most often affects young men between the ages of 15 and 45.	• Stiff backbone. • Low back pain. • Stiff, bent posture. • Breathing problems. • Swelling of the iris of the eye.	• Family history of the disease. • In some cases, it has been linked with inflammatory bowel disease. • Joints in the spine start growing together.

Autoimmune illnesses

- Rheumatoid arthritis, lupus, sjorens, ankylosing spondylitis
- Typically will have a pain component but lupus often presents initially with pronounced fatigue
- SED and CRP rates, ANA (nonspecific), DsDNA (more lupus specific), RA factor

- Funky rashes that predominate in sun-exposed areas make me worry about lupus, though some medicines can also do this


Rash happens
symmetrically
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Autoimmune continued

- ANA titers…what do these mean
  they collect the serum, and dilute ie 1:16, 1:32 1:64, etc
- The higher the number after the colon, the more it is diluted
- Then they test each dilutant to see if they detect the ANA
- The more diluted the detection threshold, the more concern for that positive result
- So…1:16 not nearly as concerning a 1:600

Chronic Pain

May be multifactorial

- Lack of sleep
- Constant discomfort
- Inflammation as a common pathway

- Contributes to depression independent of the actual “pain” component

Cancer

- Likely due to inflammation cascade
- In pancreatic and lung cancer may be other hormones involved due to the cancer

Syndrome	Symptoms	Common Antibodies
Paraneoplastic cerebellar degeneration	Rapid onset (days to weeks) of truncal and appendicular ataxia, imbalance, dizziness, nausea, diplopia, dysphagia, nystagmus	Anti-Yo, anti-Hu, anti-VGCC, anti-CV2/CRMP5, anti-Ma2, anti-Ri, anti-Tr, anti-GAD, anti-mGluR1
Paraneoplastic encephalomyelitis/ limbic encephalitis	Subacute onset of mental status changes, memory deficits, behavioral changes, emotional lability, insomnia, seizures	Anti-Hu, anti-Ma2, anti-CV2/CRMP5, anti-VGKC, anti-Ri, anti-amphiphysin, anti-$GABA_BR$, anti-AMPAR, anti-GAD
Paraneoplastic opsoclonus-myoclonus	Large amplitude ocular saccades (opsoclonus) and other abnormal eye movements alone or in combination with myoclonus; can be associated with hypotonia, irritability, ataxia and encephalopathy	Anti-Hu, anti-Ri, anti-Ma2, anti-amphiphysin
Cancer associated retinopathy	Photosensitivity and visual loss; may start in one eye and frequently progresses to involve both eyes; bilateral blindness may develop over the course of several months	Anti-recoverin

Patient I'm confused

- 82 year old female with new onset psychosis
- Onset 3 days ago; cannot sleep, confused agitated
- Now appears "depressed and agitated"


Differential?

My Differential

- Stroke
- Head injury
- Metabolic disorder
- Cancer
- New Medicine
- UTI

More information

- No fever or complaint of dysuria
- No recent head injury, no new medicines
- Urine dip positive for infection
- UTI in elderly often results in delirium as primary symptom

Patient Pseudoseizure

- 24 year old very anxious history of social anxiety
- Referred for psychogenic seizures
- Would periodically lose consciousness and jerk; it happened more in public

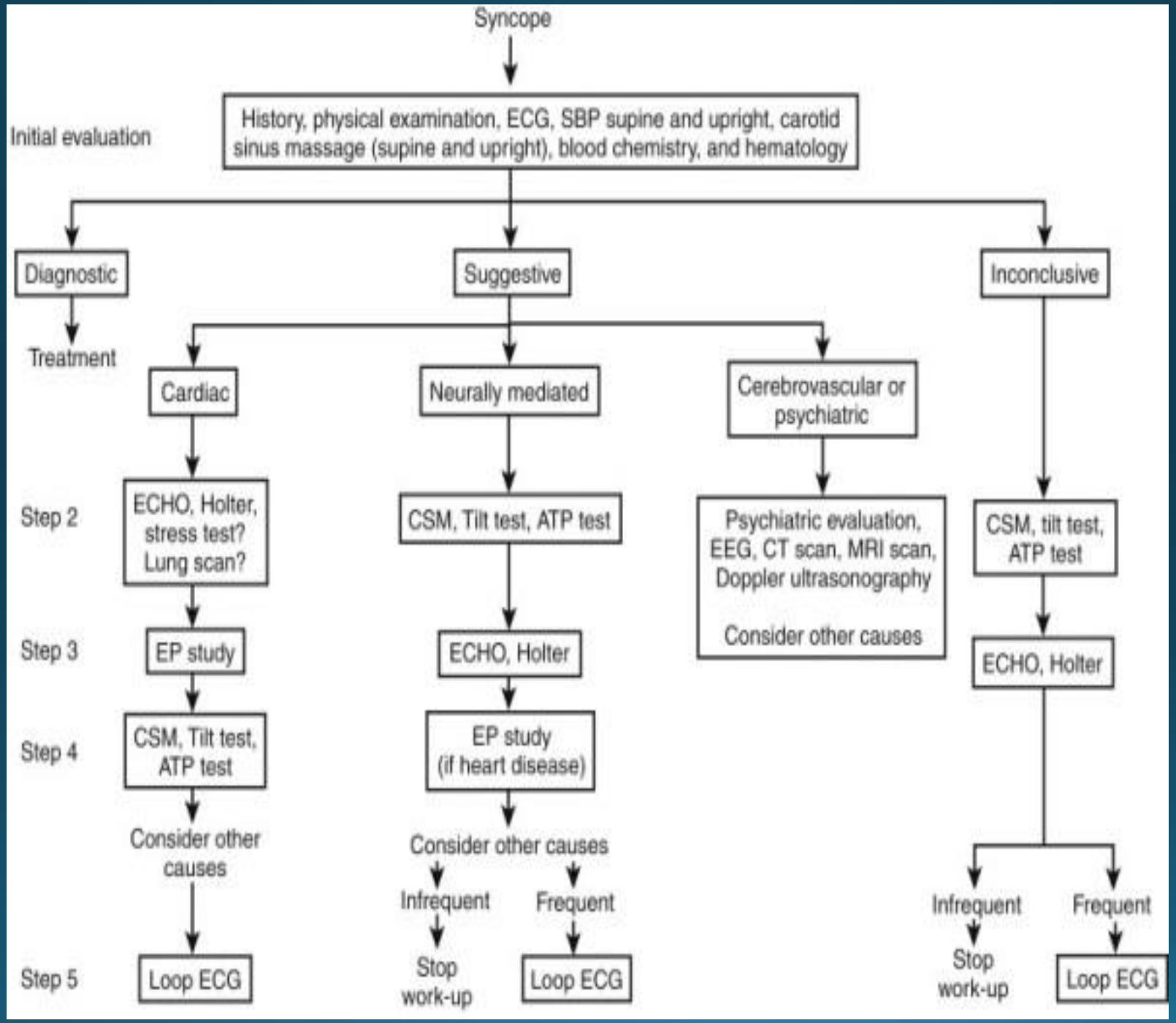

Differential?

My Differential

- GAD
- Psychogenic seizures
- Asthma
- Arrythmia?

The Something Else

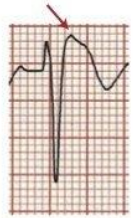
- Appeared to be passing out, more often in social situations (stressful for her)
- EEG normal
- EKG revealed WPW
- Ablation cured all symptoms


Syncope
Initial evaluation
History, physical examination, ECG, SBP supine and upright, carotid sinus massage (supine and upright), blood chemistry, and hematology
Diagnostic
Suggestive
Inconclusive
Treatment
Cardiac
Neurally mediated
Cerebrovascular or psychiatric
Step 2
ECHO, Holter, stress test? Lung scan?
CSM, Tilt test, ATP test
Psychiatric evaluation, EEG, CT scan, MRI scan, Doppler ultrasonography
Consider other causes
CSM, tilt test, ATP test
Step 3
EP study
ECHO, Holter
ECHO, Holter
Step 4
CSM, Tilt test, ATP test
EP study (if heart disease)
Consider other causes
Consider other causes
Infrequent
Frequent
Infrequent
Frequent
Step 5
Loop ECG
Stop work-up
Loop ECG
Stop work-up
Loop ECG

Approach to ECGs - Syncope Syndromes

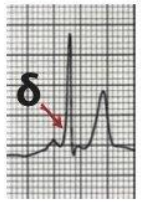
Rule out relevant tachy/brady-arrhythmias, and consider these 8 syndromes

BE WHAT QT PiE



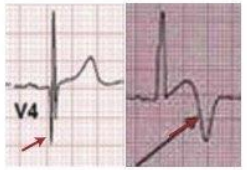
Brugada 1 - Coved STE >2mm in >1 of V1-V3 + negative T

Electrolytes
↑K - brady, peak T, wide QRS, no P, sine wave, "the great imitator"
↓K - STdep, T inv, U wave, long P
↑Ca - short QT, Osborn J (see below)
↓Ca - long QT via long ST
↑Mg - assoc with ↑K, AV block
↓Mg - long QT, assoc with ↓K

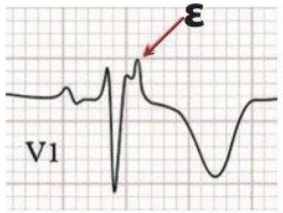


WPW - delta wave and short PR

associated



HOCM- dagger Q lat>inf leads, LVH, LAE, giant T inversion precordial



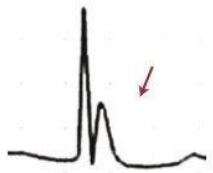
ARVD - epsilon wave, T wave inversion, QRS widening/prolonged S wave V1-V3

Trifascicular block - RBBB, LAFB/LPFB (see below), 1st degree heart block

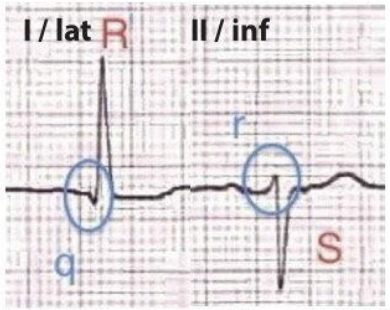
Long QT (>480-500ms)
Short QT (<360ms)

PE: RBBB, S1Q3T3, tall R in V1, RAE, RV strain (neg T V1-V4)

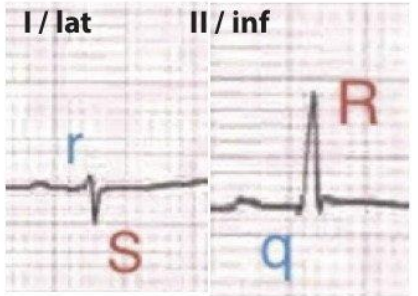
Appendix:



Osborn J waves
DDx - ↑ *Ca, hypothermia, meds, SAH*



L Ant Fascicular Block (LAFB)
Left axis and lat qR, inf rS



L Post Fascicular Block (LPFB)
Right axis and lat rS, inf qR

Mike Wong, uOttawa EM

Patient Anxious Soldier

- 42 year old army veteran
- Previous dx PTSD
- Having panic attacks, with shortness of breath, dizziness, feeling of impending doom, heart racing
- Onset after return from last deployment, going on about 9 months


Differential?

My Differential

- Exacerbation of PTSD
- Panic disorder
- Arrythmia
- Toxic exposure (camp was next to burn pits)
- Caffeine?

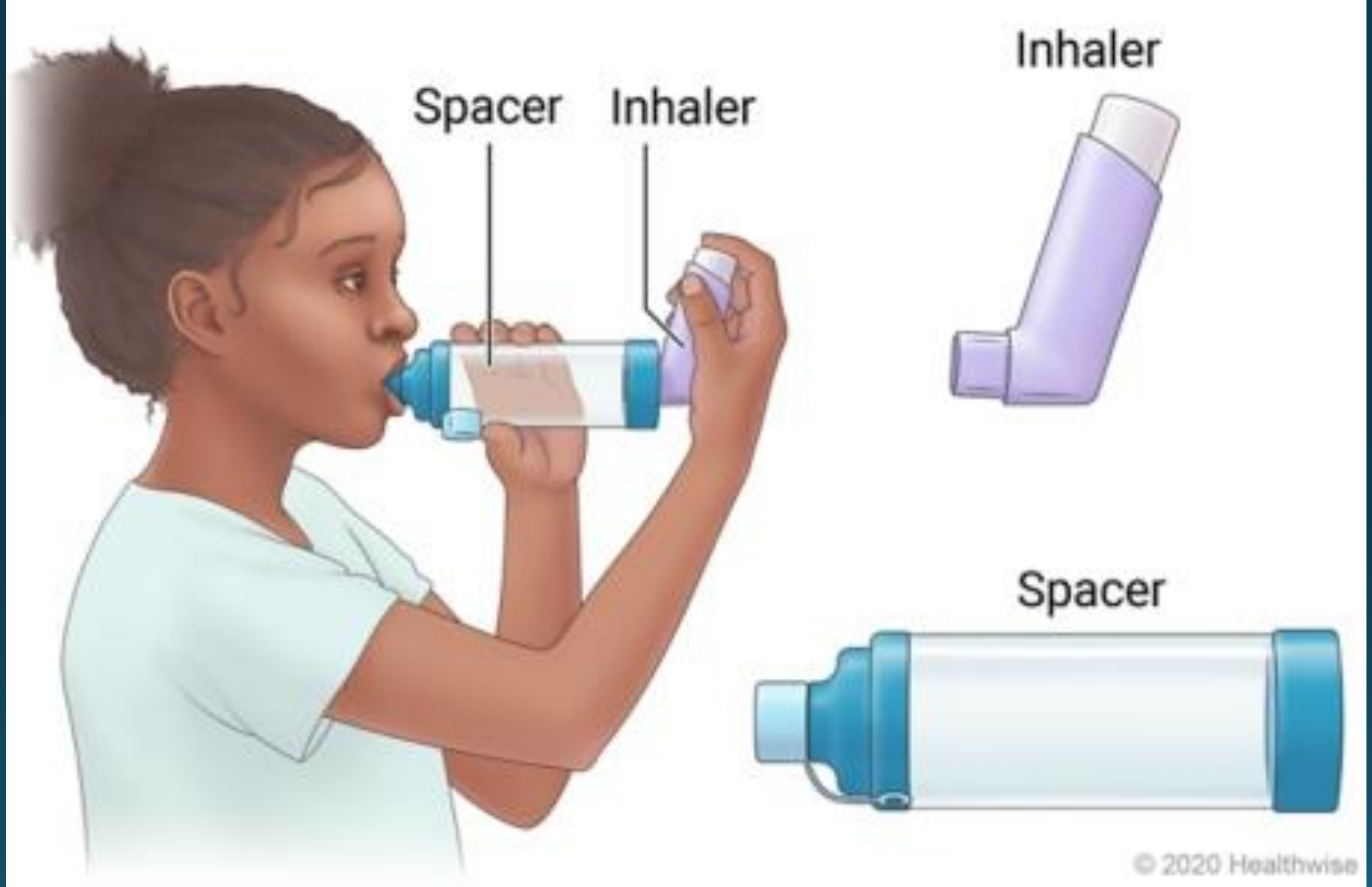
- Something else?

Med list

- Zoloft 200 mg/day
- Propranolol (off label for ptsd and nightmares)
- Albuterol….for moderate asthma presenting after last deployment

Sometimes It's what we do to people

- Burn pits—kryptonite for so many medical concerns-abusive
- Beta-blockers: can be used w/ mild or mild-moderate asthma, but can worsen asthma
- Albuterol—was using more frequently and without a spacer
  - Spacers reduce the oral and hence systemic absorption of albuterol
  - Taking more frequently due to the impact of the beta blocker
  - Needs a different preventative and a different PTSD med
  - Consider levobuterol (Xopenex) which may cause less anxiety


Spacer
Inhaler
Inhaler
Spacer
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Sleepy diabetes

- 47 year old diabetic female (good control with metformin) now with newer onset of depression, atypical: low energy, poor concentration, sad, low motivation
- Presenting for about 3 months
- No previous history of depression
- Newer peripheral neuropathy-type symptoms
- Distance runner, health advocate, low inflammation nutrition, not vegetarian


differential

My differential

- Major depression
- Dysthymia
- Perimenopausal
- New medicine?
- Dysregulated diabetes?
- Hypothyroid?
- Anemic?
- Malabsorption syndrome?
- Something else?

Lab

- Ferritin normal, cmp normal, ha1c 5.6 (amazing control), thyroid normal
- Cbc shows enlarged red blood cells
- Folate normal but b12 is 225
- B12 deficiency due to metformin use

Vitamin Deficiencies

- Not uncommon
- B12 and folate most common; b6 at times
- B12 common in: gastric bypass, gi malabsorption diseases like chrons and UC, some medicines like METFORMIN, substance misuses, pernicious anemia,etc
- B12 deficiency can be detected on a regular CBC, by looking at a number called the "MCV", which will likely be elevated with a significant b12 deficiency
- B12 deficiency remedied by shots or sometimes oral replacement
- Folate deficiency also can cause elevated MCV
- Common in some medical conditions, and with some medicines
- MTHFR gene variant: homozygous variant more so than heterozygous variants risk for folate defiency...but this test is overused IMHO and most patients with heterozygous variant will NOT struggle with a folate deficiency
- Folate replacement remedied by oral replacement, either regular or methylated folate (if impaired folate metabolism)

More sophisticated b12/folate testing

- At times b12 and folate deficiencies can be tough to unravel…
- Second level testing (outside of just b12 and folate levels) include homocysteine and methamalonic acid levels
- Homocysteine builds up with b12 or folate deficiencies, methamalonic acid levels build up with b12 deficiencies
- These can be used to further tease apart b12/folate deficiences

A word on b6

- B6 deficiencies can cause depression
- Not common
- B6 is the “goldilocks” vitamin…too little can cause depression, too much can cause neurologic symptoms such as parasthesia
- And it is a hard test to do correctly ☹

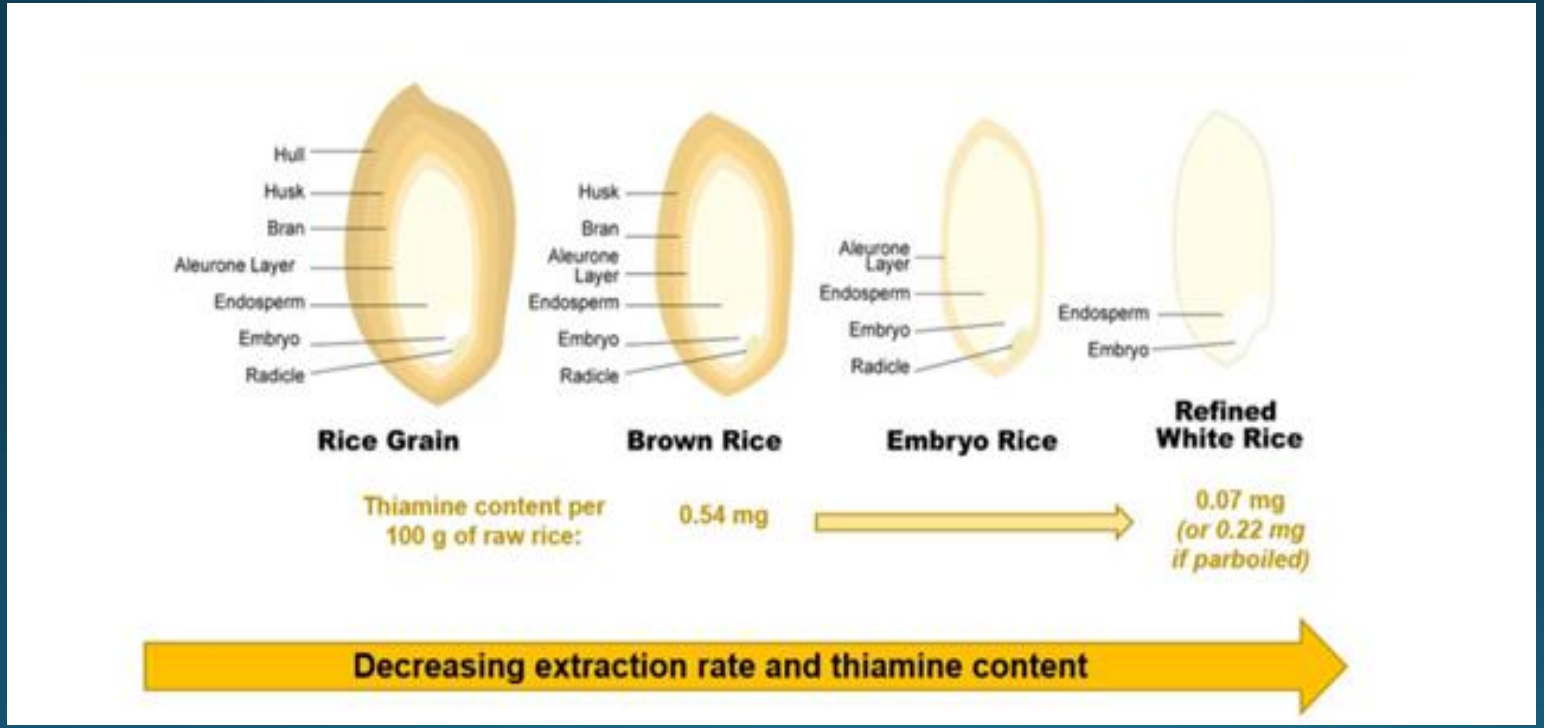
Malabsorption Syndromes

- Can also cause vitamin deficiencies
- Weight loss surgeries, Celiac, Ulcertive Colitis, Crohns, severe IBS
- Some labs: b1, b12, folate, vitamin D, calcium, iron

Things to consider checking for malabsorption

- CBC
- CMP
- Vitamin A
- B1 (thiamine)
- Vitamin b12
- Folic Acid
- Vitamin D
- Copper
- Iron
- Zinc

B1 deficiency (thiamine) (reasons you might not expect)



Patient oppositional

- 17 year old female referred for : depression, oppositional, school refusal, low energy, concentration difficulties, hypersomnia
- Going on for “a few years”
- No significant medical history
- Failed Zoloft, prozac


Differential?

My Differential

- Depression
- Anxiety
- Anemia
- Eating disorder
- Metabolic disorder
- Environmental concerns/stressors
- Learning disorder
- Something else?

Additional information

- Does not sleep well at night
- Falls asleep readily during the day
- Lab normal
- Observed cataplexy

Patient Oppositional

- Has type I narcolepsy
- Treated with Xyrem, now Xywav
- Is now a successful college student

So Many Panic Attacks

- 30 yo male long-standing history of panic attacks, anxiety and depression
- Panic continues unabated, referred into clinic for this
- Has severe anxiety, tremor, nausea, feelings of impending doom, racing heart, shortness of breath, any time of day/night
- Also struggles with IBS-diarrhea type


Differential?

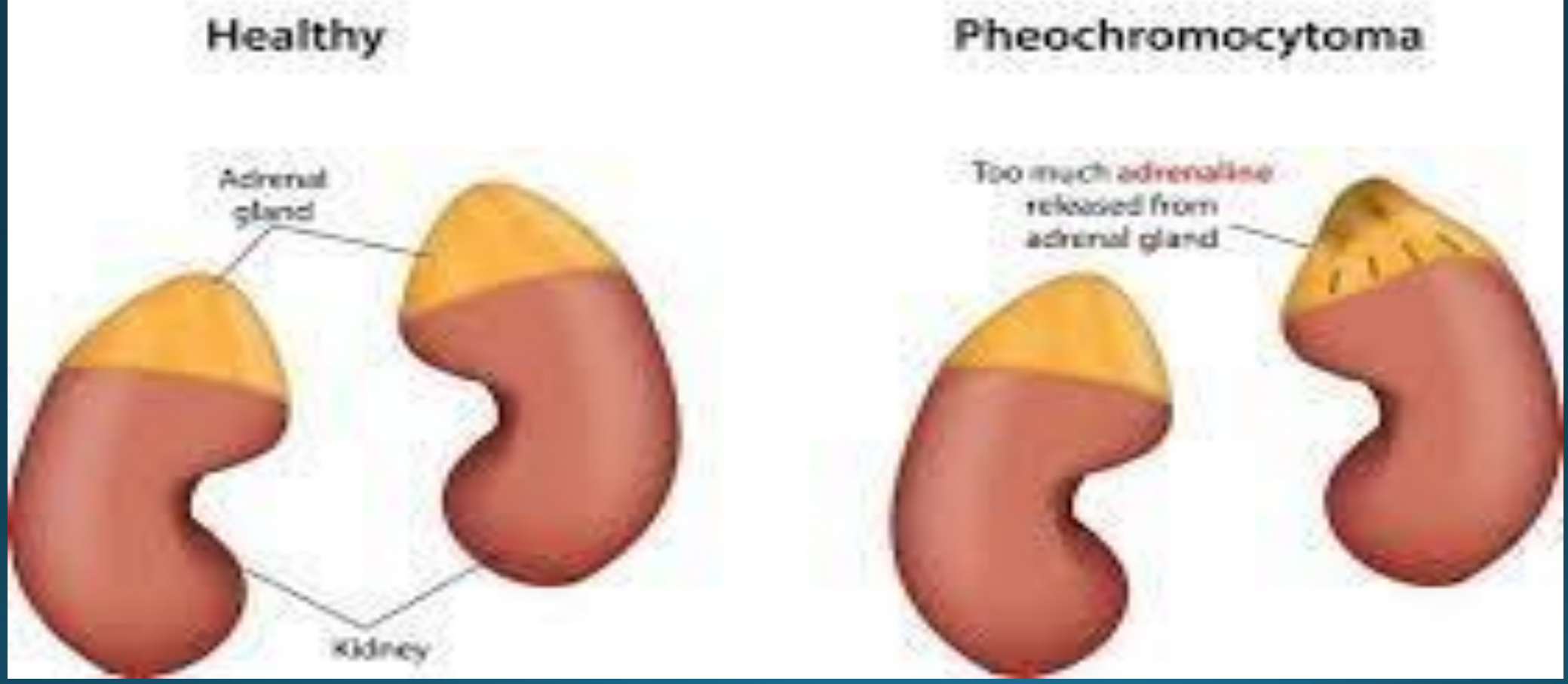
My differential

- Panic attacks
- Generalized anxiety
- IBS
- Thyroid
- Iatrogenic—a med?
- Something else?

More history

- Also has history of feeling like his pulse is bounding at times with sweating
- Bp checked at home during an episode was 180/120
- Urine catecholamine test revealed very high metanephrines
- Pheochromocytoma diagnosed and surgically removed; anxiety abated

Pheochromocytoma



Other things that look like this

- Overtreated thyroid, esp t3 and especially if paired with stimulant (weight loss clinics, some “wellness” clinics)
- Overtreated testosterone
- Some supplements for weight loss

I’m bipolar

- 48 year old female with newer onset anxiety, irritability, panic attacks, insomnia, mood swings with anger
- Presenting due to irritability with her teenagers
- Has presented gradually over the past 9 months


Differential?

My differential

- Bipolar disorder
- Anxiety
- Depression
- Environmental stresses—teenagers
- Insomnia
- Perimenopausal
- other

Additional history

- Patient has recently begun hormone therapy and treatment for weight loss
- Combination of armour thyroid (t4/t3), phentermine and testosterone
- Lab: tsh <0.02, free t3 5.2, testosterone >800

Don’t do this ☹

- Patient was receiving medicine from multiple providers and noncompliant with lab recommendations
- T3 plus stimulant—high anxiety, panic and can cause cardiac risks
- Testosterone was overtreated
- Resolution of these concerns resolved her symptoms

continued

- HRT treatment is appropriate for many people
- Weight loss is also often appropriate for patients with bmi of 27 or greater
- There are medicines FDA indicated to address this in a safe manner

New onset paranoia

- 28 yo new onset paranoia, confusion, anxiety, agitation, personality change
- Also pseudoseizures
- Previous psychiatric history is mild anxiety

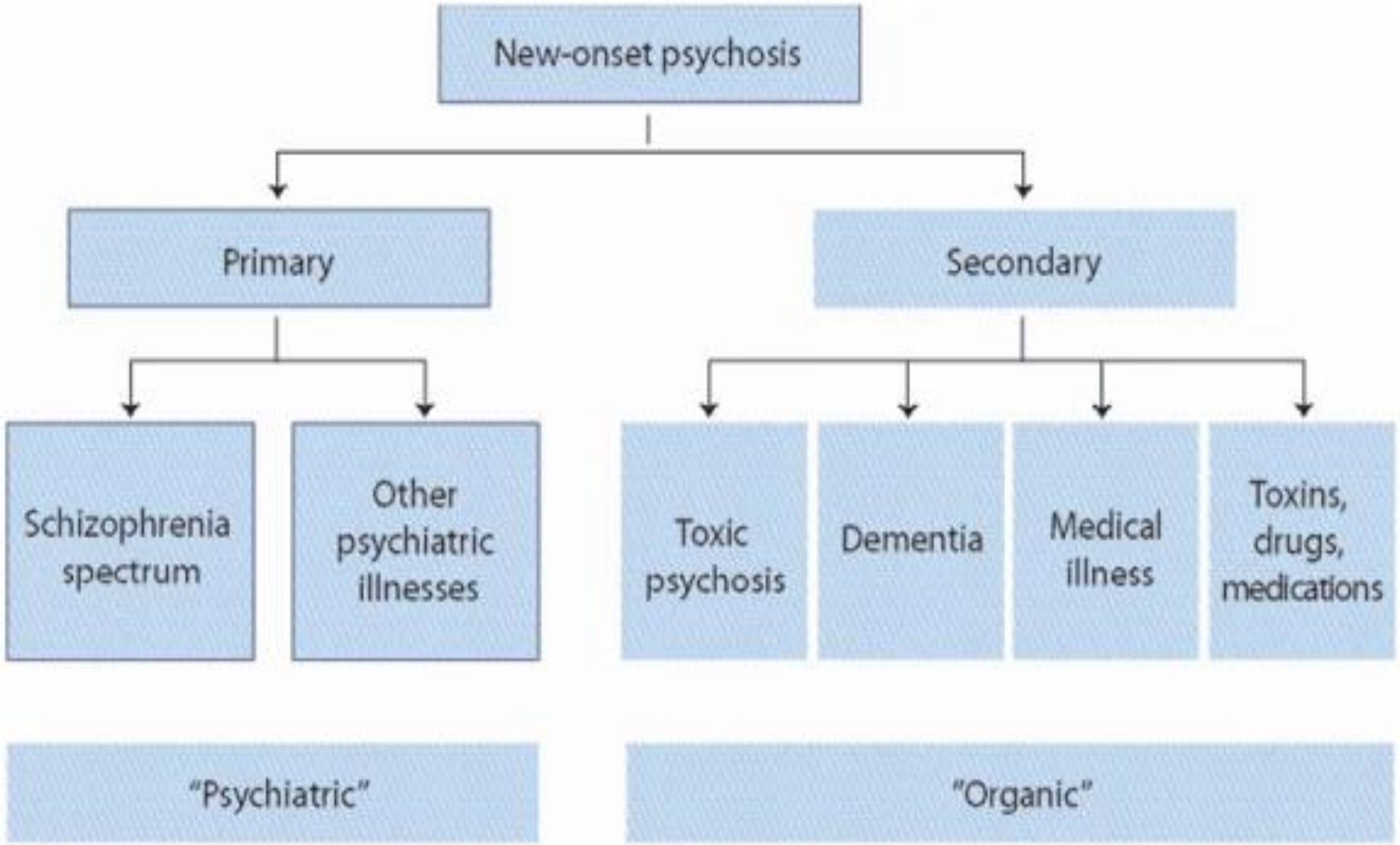

Differential?

My differential

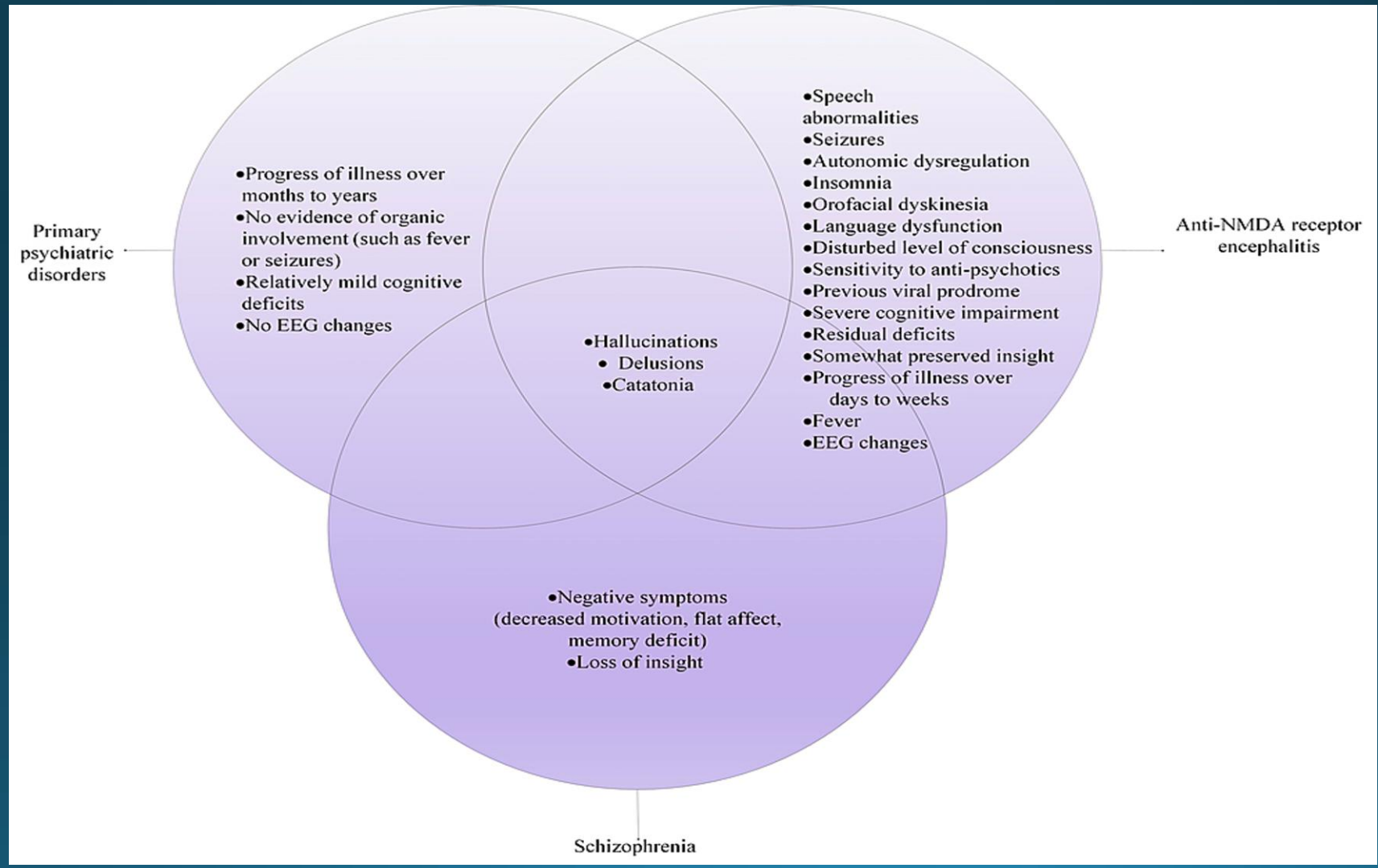
- Schizophrenia or other psychotic d/o
- Bipolar disorder
- Medicine
- Head injury
- Autoimmune

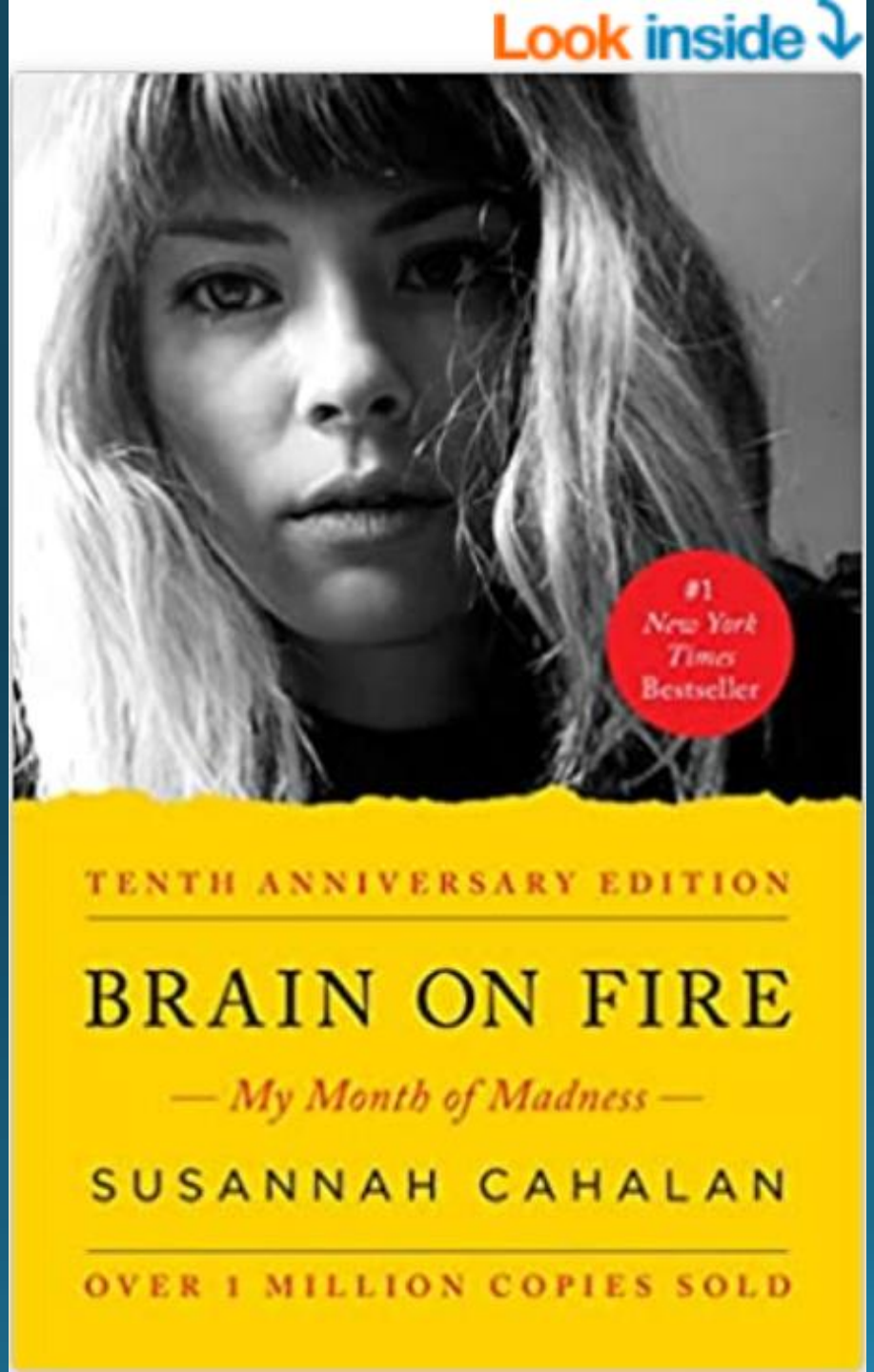
Figure

Differential diagnosis of new-onset psychosis



Anti-NMDA receptor Encephalitis

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BRAIN ON FIRE
— My Month of Madness —
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Some evolving thoughts on psychiatric disorder

- Inflammation as a common pathway
- Attacking inflammation through lifestyle and nutrition
- Possible gut relationship to mood disorders being explored