

San Francisco VA
Epilepsy Center of Excellence:
*State-of-the-Art Diagnostic &
Therapeutic Services*

Nina Garga, M.D.

Manu Hegde, M.D., Ph.D.

John Hixson, M.D.

William Marks, M.D.

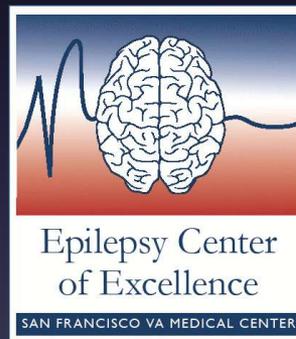
Karen L. Parko, M.D.



Epilepsy and Depression

Manu Hegde, MD, PhD

Health Sciences Clinical Instructor



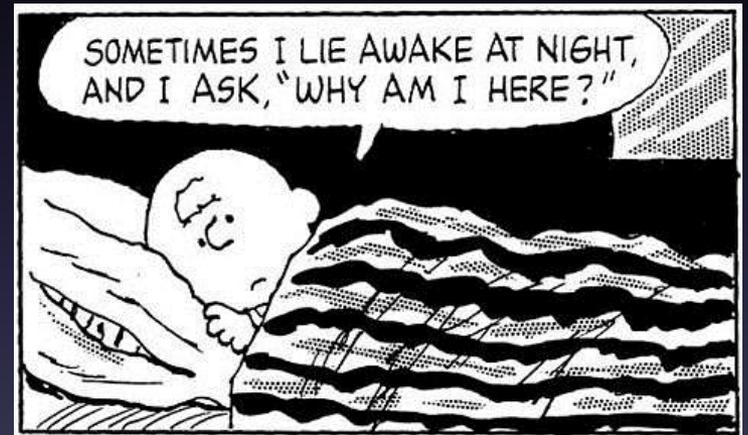
What is Depression?

- Clinical depression: a mood disorder in which feelings of sadness, loss, anger, or frustration *interfere with everyday life* for weeks or longer
- “Major depression:” depressed mood every day for at least two weeks
 - 15% of the population experiences depression at some point in life
 - 6-8% of primary care patients meet criteria for the diagnosis
- *25-55% of epilepsy patients have depression*
- *Depression is a real disease!*



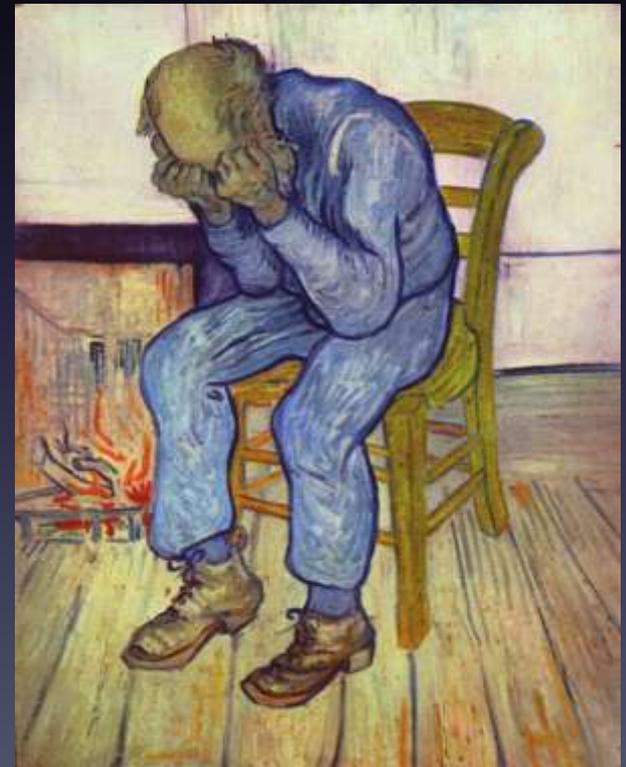
What are the symptoms?

- Sadness/depressed mood
- Insomnia (with early morning awakenings, 2-4 AM)
- Loss of interest (“anhedonia”)
- Feelings of guilt or worthlessness
- Decreased energy
- Concentration difficulties
- Disturbance of appetite or weight
- Agitation, restlessness, or slowness of thoughts/movement
- Suicidal thoughts, plans, or attempts



What causes depression?

- No single cause, but contributing factors include:
 - Abnormal brain chemistry
 - Due to genetics
 - Due to a reaction to stress
 - Alcohol or drugs
 - Medical problems
 - Medications
 - Sleeping problems
 - Stressful life events
 - Relationship/work problems
 - Death or illness of loved ones
 - Social isolation



What's the risk if you have epilepsy?

- 25-55% of epilepsy patients have depression
- The suicide rate is higher for people with epilepsy
- Those with depression have a worse quality of life
- We do a poor job of treating depression in people with epilepsy....

Why?

- The focus is on seizures
- Fear of medication interactions (antidepressants and anticonvulsants)
- Poor understanding of how the diseases are linked

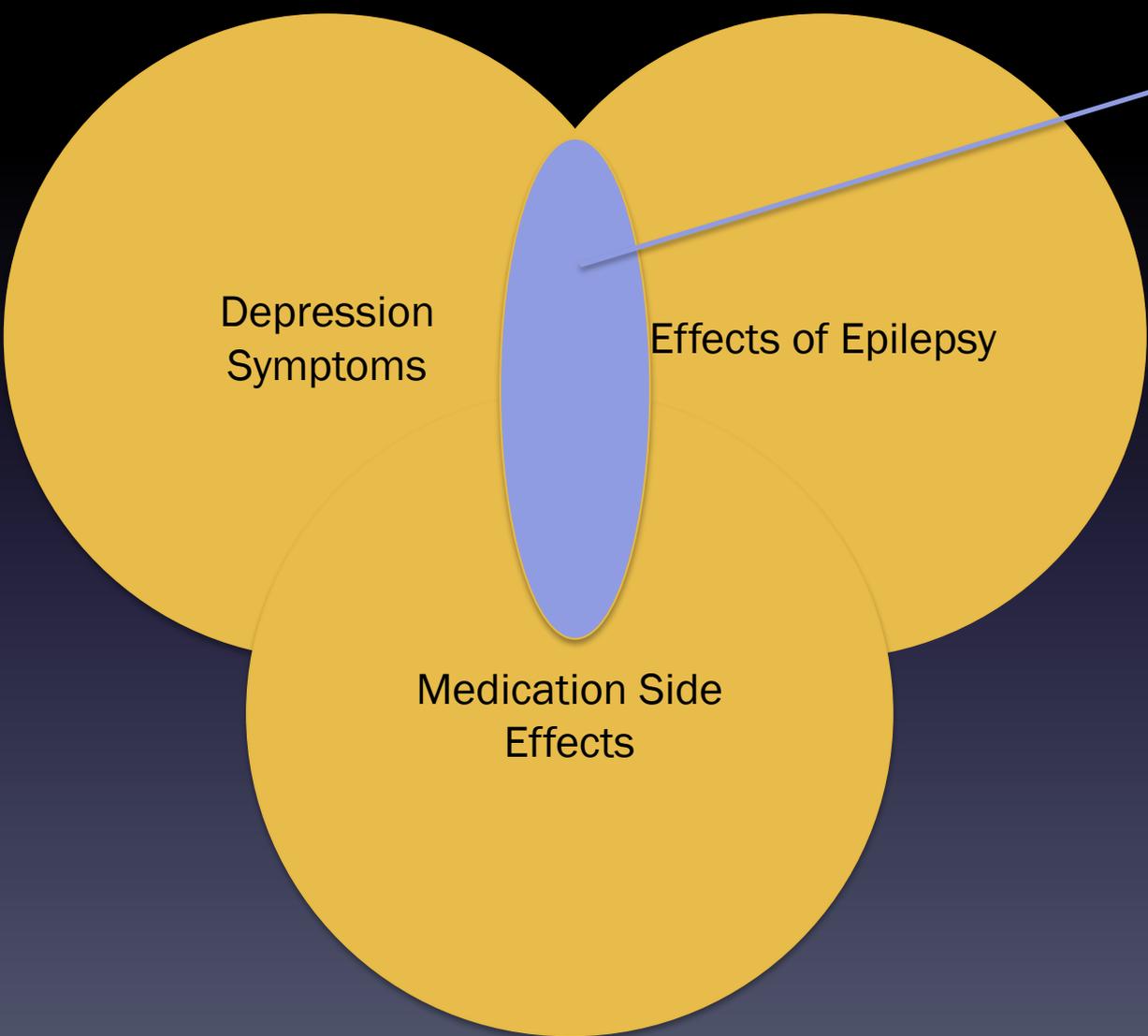
Why are epilepsy patients more likely to become depressed?

- Psychological stress caused by life with epilepsy
- Medication side effects
- The cause of the epilepsy (TBI, stroke, etc) may cause depression
- The epilepsy itself...

Depression
Symptoms

Effects of Epilepsy

Medication Side
Effects



Depression
Symptoms

Effects of Epilepsy

Medication Side
Effects

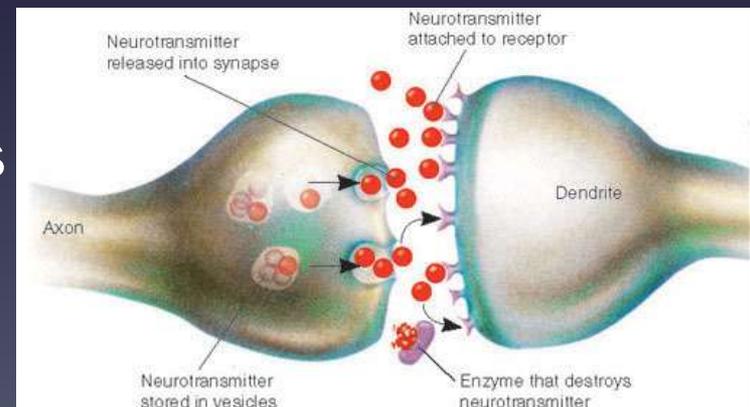
- Overlap:**
- Sad mood
 - Feeling worthless
 - Sleep disturbance
 - Decreased energy
 - Trouble concentrating
 - Disturbance of appetite/ weight
 - Agitation/restlessness
 - Slowed thinking

Anticonvulsants and depression

- Better
 - Carbamazepine (Tegretol)
 - Lamotrigine (Lamictal)
 - Valproate (Depakote)
- Worse
 - Topiramate (Topamax)
 - Levetiracetam (Keppra)
 - Phenobarbital
 - Vigabatrin (Sabril)

Epilepsy and Depression: The Link

- Nerve cells in the brain are constantly firing tiny electrical impulses
- These electrical impulses trigger nerve cells to release chemicals called neurotransmitters
- Neurotransmitters bind to neighboring nerve cells, triggering more tiny electrical impulses, and the process repeats....



The Link, continued...

- Seizures are essentially “electrical storms” in part of the brain, caused by excessive synchronized electrical activity (too many neurons firing at the same time, instead of doing their job)
- These “electrical storms” may cause changes in the amounts or location of neurotransmitters
- Low levels of neurotransmitters (especially serotonin and norepinephrine), are at least partially responsible for depression

Evidence from the lab

- Rats with epilepsy seem “depressed”
 - Less exploration
 - Drinking less sugar water
 - Their neurons have fewer “branches” and less serotonin, norepinephrine
- Rats who experience stress as newborns:
 - Develop seizures more quickly when exposed to seizure-causing drugs
 - Appear depressed, as above



Evidence from the lab

- In humans with epilepsy, PET scans show fewer receptors for serotonin
- People with depression *before* they developed epilepsy are twice as likely to develop treatment-resistant (severe) epilepsy
- The neurotransmitters associated with epilepsy (glutamate and GABA) may be linked to the neurotransmitters associated with depression (serotonin and norepinephrine), but we don't yet understand these links

Bottom line...

- We don't fully understand the link between depression and epilepsy
- Epilepsy may cause depression in people who are predisposed (genetics) or under significant stress
- It is possible that epilepsy makes depression worse, or vice-versa – but we need more research to understand this



Can depression be treated?

- YES!
- Medications
- Therapy
- ECT
- There is ALWAYS hope....

Medications for Depression

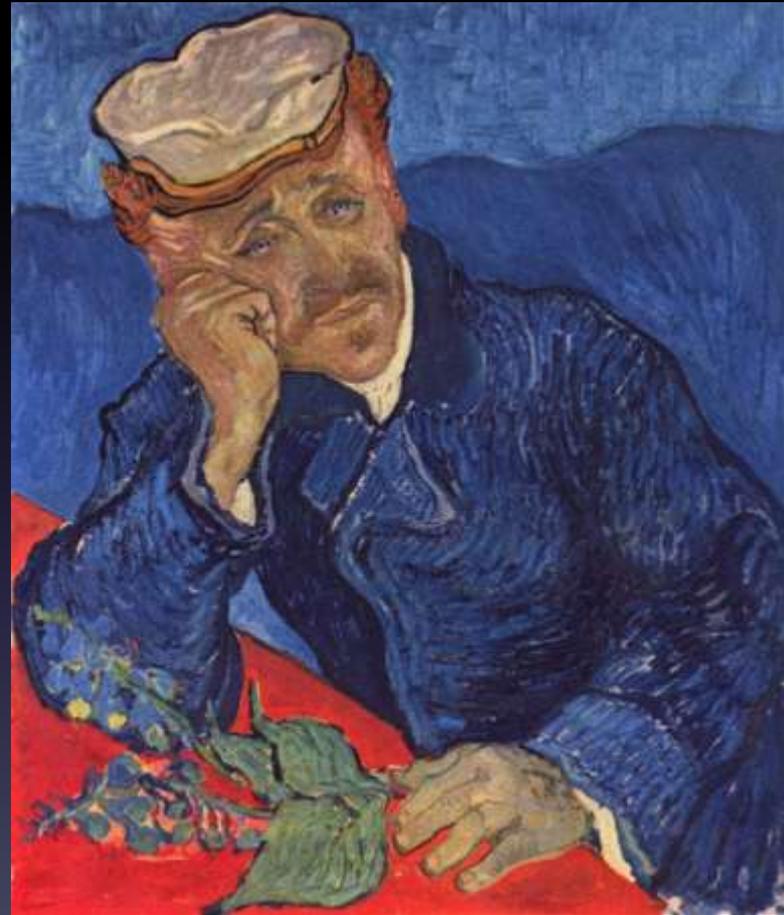
- Selective serotonin reuptake inhibitors (SSRIs):
 - Fluoxetine (Prozac) – “activating”
 - *Mirtazapine (Remeron) – “sedating”
 - Sertraline (Zoloft)
 - Paroxetine (Paxil)
 - Fluvoxamine (Luvox)
 - **Citalopram (Celexa)**
 - **Escitalopram (Lexapro)**
- Selective norepinephrine reuptake inhibitors (SNRIs):
 - Desvenlafaxine (Pristiq)
 - Venlafaxine (Effexor) – anti-anxiety effects
 - **Duloxetine (Cymbalta)**
- Drug interactions more likely with fluoxetine, fluvoxamine, or paroxetine
- Drug interactions less likely with escitalopram, citalopram, or sertraline
- There are other types of antidepressants (TCA inhibitors, MAO inhibitors, etc), but these are rarely used in people with epilepsy

* - technically not an SSRI, but similar....



Side Effects of Antidepressants

- Loss of appetite/weight
- Drowsiness
- Dizziness
- Fatigue
- Headache
- Nausea
- Dry eyes and mouth
- Urinary retention
- Sexual dysfunction



Antidepressants, continued

- Most “failures” of antidepressants occur because
 - the side effects weren’t tolerated
 - The dose was too low to be effective
- Talk to your doctor...
 - About the principle of “maximal tolerated dose”
 - About being patient... weeks to months needed to see an effect

Epilepsy surgery and depression

- A recent study of patients who had epilepsy surgery:
 - 22% were depressed before surgery
 - 17% were depressed after surgery, if still having seizures
 - 8% were depressed after surgery, if not having seizures
- Vagus Nerve Stimulator
 - Initially developed as a treatment for epilepsy, but now FDA-approved for depression
 - Effectiveness is controversial, mechanism is poorly understood

Suicide

- People with epilepsy are at higher risk of suicide than the average person
- There is some data that anticonvulsants and antidepressants can increase the risk of suicide slightly in young people! BUT....
 - This is extremely rare
 - The reasons are not understood (but theories abound)
 - The risks of untreated epilepsy or depression are much higher than the risk of suicide on antidepressants or anticonvulsants
- **Anyone who expresses thoughts about hurting himself or herself should be taken extremely seriously!**
- Contact a physician, emergency room, or hotline immediately if a depressed person:
 - discusses a specific plan to hurt himself or herself
 - gives away treasured items
 - suddenly begins making plans/arrangements for their absence in the future
 - It is okay to ask direct questions!

Mental Health Support

ASK FOR SUPPORT WHEN YOU NEED IT!

- Talk to someone about...
 - your stress, problems, worries
 - the disappointment you feel after a seizure
 - your frustration at having to pace yourself slower than others
 - the feeling of not being “normal” like everyone else
 - the anger or irritation you get from having to take all of your medications and their side effects

DON' T BE AFRAID TO GET PROFESSIONAL HELP!

- Psychotherapy (counseling)
- Support groups

Psychotherapy

Types

Psychoanalytic (Freud), psychodynamic, cognitive-behavioral, mindfulness-based, short-term, long-term, etc.

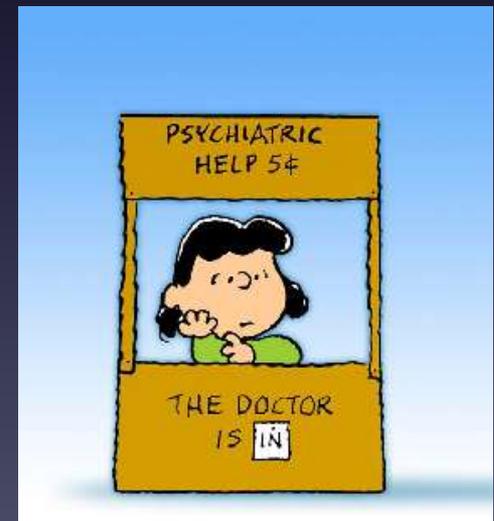
Modalities

Individual (child, adolescent, adult), couples, family, group

Counselors

-Licensed Clinical Social Worker, Marriage and Family Therapist, Psychologist, Psychiatrist

Find the right counselor for YOU



Group Support

Living With Epilepsy

Open to all adults with epilepsy and any caregivers, families, and friends.

Every 2nd Monday of the month

11am-12:30pm

SFVA Epilepsy Center

Gil Woo



Resources

- www.epilepsy.com
- www.epilepsynorcal.org
- www.epilepsyfoundation.org
- www.epilepsyadvocate.com
- National Suicide Prevention Hotline: (800) 273-TALK
- Veterans Suicide Prevention Hotline: (800) 273-TALK
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Remember, there is always hope!

- Thanks to
 - Gil Woo
 - Brian Alldredge, PharmD
 - Paul Garcia, MD
 - The VA ECoE team
 - All of you for attending!

