WHAT IS ANXIETY?

- Anxiety affects the way you THINK, FEEL, and ACT
- Positive or negative?
- Depends on real or perceived danger
- Prepare for "fight of flight" response
- Expressed in many ways – shaking, palpitations, chest pain, fear of dying, crying, numbness, sweating

NORMAL RESPONSE:

- Adaptive, transient response to a "threat"
- Response is proportional to the level of danger
- Enhances motivation, alertness, and function

ABNORMAL RESPONSE:

- Disproportionate response leading to irritational fear that impairs daily functioning
- Response is excessive, persistent, and meets DSM-V criteria
- Untreated patients report poorer quality of life

EPIDEMIOLOGY:

- Anxiety & related disorders: lifetime prevalence 31%
- 40% of patients diagnosed with anxiety & related disorders are untreated

RISK FACTORS:

- Environmental stressors (death, divorce, isolation (poor social support), poverty, unemployment)
- Genetic disposition
- Family hx of anxiety or mood disorders
- Personal hx of mood disorders
- Females > males
- Medical disorders
- Medications

CAUSES:

- Medications
  - Anticonvulsants
  - Antidepressants
  - Antihypertensives
  - Bronchodilators
  - Stimulants (incl. caffeine)
  - Steroids
  - DA agents
  - NSAIDs
  - Levothyroxine
  - Sumatriptan
- NHPs (high dose ginseng, St. John's Wort, Kava Kava)
- Medical conditions
  - Cardiovascular
  - Respiratory system
  - Neuro: epilepsy, chronic pain, PD, migraines
  - Endo: hyper/hypo-thyroidism, hypoglycemia, hypoNa, hyperK, Cushing's, pheochromocytoma
- Gender (women 2x risk of men)
- Socioeconomic
- Stressful event in susceptible people

ANXIETY AS A CO-MORBIDITY:

- Anxiety and related disorders frequently co-occur with other psychiatric disorders
- > 50% of patients have multiple anxiety disorders
  - 30% have ≥ 3 comorbid anxiety/related disorders
- Often comorbid with substance use & mood disorders
  - 52% of patients with bipolar disorder
  - 60% of MDD patients, 47% of ADHD patients will have comorbid anxiety or related disorder
- Pts with anxiety disorders have higher prevalence of HTN, GI disease, arthritis, thyroid disease, respiratory disease, migraine headaches, allergic conditions

INITIAL ASSESSMENT OF PATIENTS WITH ANXIETY:

- Screen for anxiety and related symptoms
  - Anxiety and related disorders are generally characterized by the features of excessive anxiety, fear, worry, and avoidance
- Conduct differential diagnosis (consider severity, impairment & comorbidity)
  - Rx medications, OTC agents, alcohol use, caffeine intake, illicit drug use
  - CBC, electrolytes, TSH
- Identify specific anxiety or related disorder
- Psychological and/or pharmacological treatment
- Perform follow-up

SYMPTOMS:

Physical	Psychological	Functional
• CNS: insomnia, light-headedness, loss of energy, headache, fatigue, flushing, chills • CV: palpitations, chest pains • RESP: SOB, choking sensation • MSK/DERM: sweating, muscle tension, tremors, shaking • GI: nausea, loss of appetite, diarrhea, "butterflies," stomach pain • GU: bladder weakness	• Fear • Worry (>50%) • Indecision • Apprehension • Easily startled • Restlessness • Irritability • Poor concentration	• ↓ productivity • Social isolation • Poor coping skills

ETIOLOGY THEORIES: complex – not fully understood

BIOLOGIC: associated areas of the brain

- Amygdala: assesses fear (NE)
- Locus Coeruleus (LC): senses fear (NE)
- Hippocampus: memory
- Hypothalamus: decodes amygdala (NE/5HT) ; CRF release

ABNORMAL FUNCTION OF SOME NEUROTRANSMITTERS:

NORADRENERGIC MODEL:

- Hypersensitive and over-active to stimuli
  - Overactive NE firing from LC during fear, stress, anxiety
  - Drugs that decrease NE activity = anxiolytic effects
  - LC = alarm center that activates NE release and stimulates the sympathetic and parasympathetic nervous system
- α_1 and α_2 adrenergic postsynaptic receptors - distributed in brain areas related to anxiety disorders
  - α_1 : important in startle & sleep response
    - Excessive activation of these receptors contribute PTSD sx
  - α_2 : involved in cognitive processing & in appropriate responses to standard levels of emotional stimuli
    - Chronic noradrenergic overactivity downregulates α_2 receptors in patients with GAD

SEROTONIN MODEL:

- Inhibitory effect on NE and CRF
  - Decreased NE firing in LC
  - Decreased CRF release from hypothalamus

GABA MODEL:

- Anxiety disorder = lack of inhibition resulting in uncontrolled anxiety
- Drugs that enhance GABA activity (i.e. BZDs) have anxiolytic & sedative effects

HPA AXIS:

PATHWAY:

- Stress → hypothalamus releases CRF
- CRF → anterior pituitary to increase ACTH in bloodstream
- ACTH → adrenal cortex to release cortisol
- Important in stress response

DYSREGULATION:

- Lower urinary cortisol
- Elevated lymphocyte glucocorticoid receptor levels
- Dexamethasone suppression
- Chronic adrenal exhaustion from inhibition of HPA axis by persistent severe anxiety
- Seen mainly in PTSD