MASSACHUSETTS GENERAL HOSPITAL
PSYCHIATRY ACADEMY

Management of Anxiety in Cardiac Care

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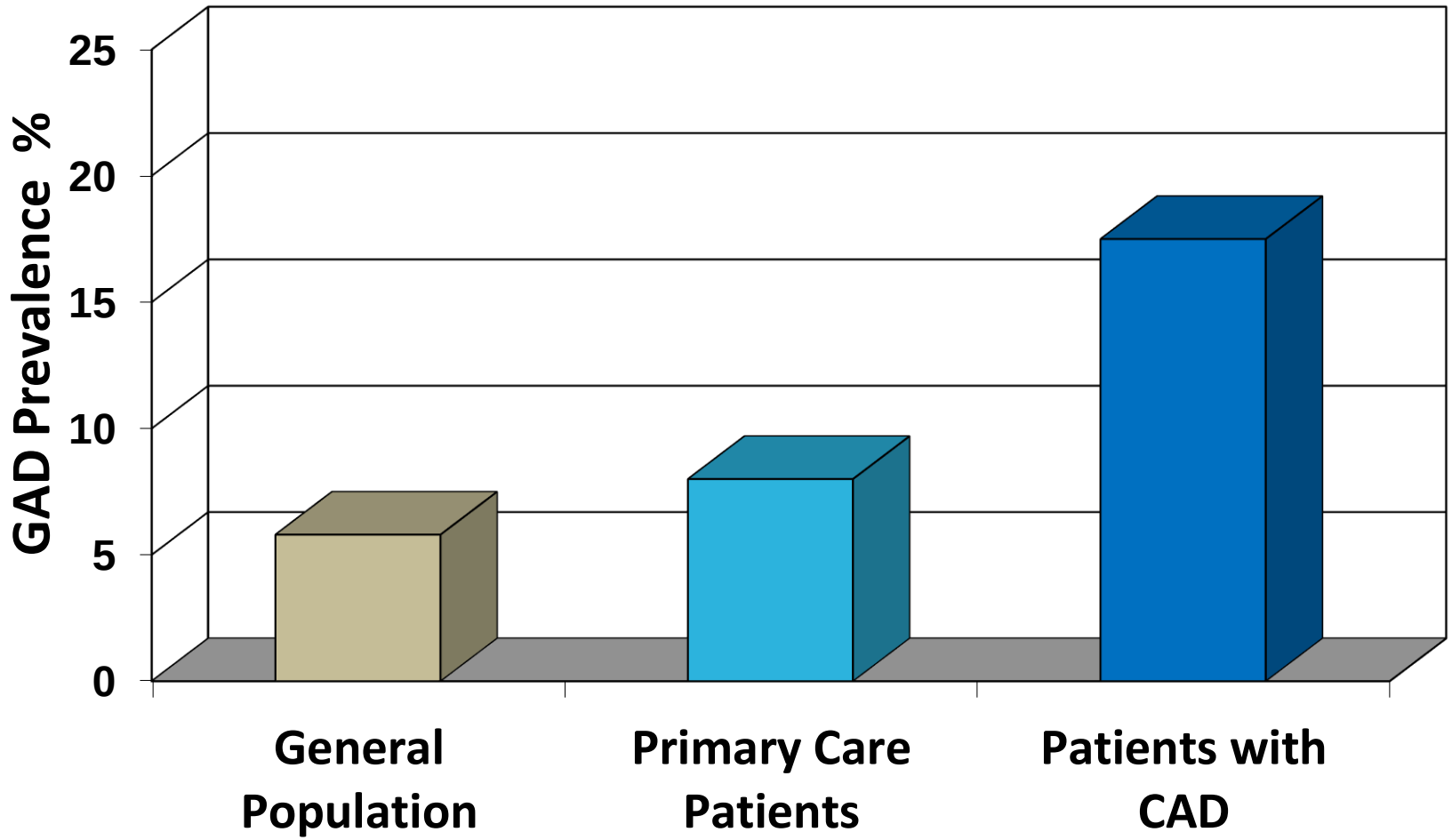
Disclosures

"Neither I nor my spouse/partner has a relevant financial relationship with a commercial interest to disclose."

Anxiety in Cardiac Disease

- Anxiety is common in patients with cardiovascular disease (CVD)
  - 20-30% experience elevated anxiety surrounding myocardial infarction
    - Often transient, it persists for up to 1 year in 50%
  - Similar rates in those awaiting coronary artery bypass grafting (**CABG)**
  - Approximately 30% of patients with **heart failure** are anxious (13% meet criteria for an anxiety disorder)
  - Approximately 20-40% of those with an **implantable device** (i.e., defibrillator) are anxious

Anxiety in Cardiac Outpatients



Tully, 2013; Hoge, 2012; Celano, 2016

Anxiety Post-MI

- **Elevated anxiety symptoms**
  - ~20-25% have substantially elevated rates of anxiety post-myocardial infarction (MI)
    - Scores greater than for psychiatric inpatients
    - Often develop an Axis I anxiety disorder
  - Often a reaction to adverse cardiac effects

Anxiety and Cardiac Outcomes

- Complex relationship between anxiety and cardiovascular health
  - Often a normal response to a stressful situation (prompting engagement in treatment)
  - If persistent or excess, can be detrimental to health
  - Associated with the onset of CAD (26% increase) & progression of disease

Roest, 2010

Anxiety Disorders

- **Generalized Anxiety Disorder**
  - Meta-analysis shows 11% point prevalence and 26% lifetime prevalence in patients with CAD & 14% in patients with HF
  - Consistent connections with adverse cardiac outcomes
    - » Independent connections with mortality 1 year post-MI
    - » Independent connections with adverse outcomes in stable CAD

Celano 2014; Roest 2012

Panic Disorder

- **Panic disorder** also common in those with heart disease
  - Prevalence variable: 5-50% in CAD
  - While less common than GAD, PD increases the risk and progression of cardiac disease
    - Incident CAD
    - Major cardiac adverse events
    - MI

Tully, 2015

PTSD

- **PTSD** also common in patients with CHD
- Prevalence estimates: 6-24%
- PTSD associated with:
  - CAD
  - Heart failure
  - Higher mortality rates

Mechanisms

- Health Behaviors
  - Diet
  - Exercise (cardiac rehab)
  - Medication adherence
  - Smoking
- Physiologic
  - Inflammation (IL-1, IL-6, TNF-alpha, CRP)
  - Platelet dysfunction
  - Autonomic dysfunction
  - Endothelial dysfunction

Clinical Care Tips

- **Diagnose Anxiety Disorders**
  - Use standard criteria: focus on cardinal symptoms (e.g., chronic worry and difficulty controlling worry for GAD)
- **Assess Co-morbidities**
  - Be sure to assess for depression as well
- **Initiate Treatment**
  - Benzodiazepines are safe in the acute phase
  - Sertraline is the simplest choice in nearly all cases
  - CBT works well
  - Start low, but keep going and provide stepped care
  - Encourage: exercise, social support, cardiac rehabilitation

Treatment of Anxiety

- **Acute Anxiety: Benzodiazepines**
  - Benzodiazepines are effective in post-MI period
    - Effectively reduce anxiety
    - Effectively reduce catecholamines and blood pressure
  - Minimal risk of dependence when used short-term
- **Anxiety Disorders**
  - SSRIs: first-line treatment
  - CBT works well (especially for panic disorder)
  - Benzodiazepines

Treatment of Anxiety

- **SSRIs**
  - Best studied
  - Typically don't cause orthostatic hypotension
  - Majority of studies in CHD are for depression, but the safety profiles are same
  - Sertraline, citalopram, fluoxetine, paroxetine, and escitalopram have all been shown to be safe

Treatment of Anxiety

- **SSRIs**
  - Platelet aggregation inhibition—may increase risk of bleeding (may also be protective)
  - May reduce mortality post-MI (positive “side effect”)
  - QTc prolongation?

Antidepressants and QT Prolongation

- The magnitude of QTc prolongation with SSRIs is small
- Citalopram appears to be the worst offender (and escitalopram to a lesser extent)
  - Actual QTc prolongation remains minimal (~5 ms per 20 mg citalopram)
- Other agents appear to have no—or nearly no—association with a prolonged QTc
  - SSRIs, bupropion, mirtazapine best studied

Treatment of Anxiety

- **SNRIs**
  - Less studied than SSRIs
  - Venlafaxine may increase HR and BP
  - Venlafaxine associated with HF in overdose
  - Duloxetine & venlafaxine can worsen HF
  - Bottom line: second-line agents

Treatment of Anxiety

- **TCAs**
  - May cause
    - Anticholinergic symptoms, e.g., tachycardia
    - Orthostatic hypotension
    - Conduction system abnormalities
    - Longer QTc prolongation than SSRIs
    - Higher rates of new MI
    - Bottom line: 3rd line or avoid

Treatment of Anxiety

- **Psychotherapy**
  - CBT most studied (mostly depression)
  - May be preferable to psychotropics
    - no side effects
  - Improves psychological symptoms compared to usual care
  - More studies needed

Summary

- Anxiety and anxiety disorders are common in those with cardiovascular disease
- Anxiety is associated with poor cardiovascular health
  - e.g., development and progression of CAD and HF
- Relationships between anxiety and cardiac outcomes likely mediated by both behavioral and physiologic mechanisms
- Treatment of anxiety disorders is critical
- Treatment with SSRIs, benzodiazepines, and CBT appears safe & efficacious

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