Heart & Mind:
Depression, Anxiety & Heart Disease

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Why is this important?

- What was your emotional response when you found out your doctor was concerned about your heart, had some form or heart disease, or that you needed a life-saving procedure?
- How did you react when a family member had a heart attack?
- What activities have you avoided because you were concerned that you would have chest pain or other symptoms? How has your lifestyle changed?
- How has your mood interfered with your following through with the recommendations made by your cardiologist?

Heart & Mind

- The more we learn about our heart, the more aware we are of the relationship between our thoughts, behaviors, and emotions and their affect on our bodies.
- Over the years, we've seen more and more evidence of the role that depression and anxiety play in
  - CHF
  - Response after a CABG, PCI (stent), or heart attack
  - Blood pressure management
  - Adherence to cardiac rehab and/or lifestyle changes
  - Response after transplant or LVAD surgeries
- American Heart Assn has placed increasing emphasis on research and assessing and treating anxiety and depression in individuals with CHD.

Depression & Heart Disease

- Studies implicate depression as an independent risk factor in the progression of CHD rather than as an emotional response to the illness only.
  - The presence of even mild depression is a risk factor. This is not new information. Research has been accumulating since approximately 1993.
- 2014 Scientific Statement by the AHA elevated depression as a risk factor for CHD.
  - AHA recommended that everyone with CHD be screened for depression.
  - However, once depression is identified as a problem, what are you supposed to do?

Anxiety Disorders

- Most commonly occurring category of all of the mental illnesses (National Comorbidity Survey-Replication, (+9000 individuals interviewed)
  - 18.1% lifetime prevalence (any mood disorder = 9.5%)
- Lack of precision in defining anxiety in all but the anxiety disorders literature (e.g., “stress” vs. anxiety)
  - Lack of precision is likely due to anxiety being a category and not being only one diagnosis.
    - Anxiety Disorders include: Panic with and without Agoraphobia, Generalized Anxiety Disorder, Social Anxiety Disorder, Obsessive Compulsive Disorder, Specific Phobia, PTSD

Anxiety Defined

- …a future-oriented negative mood state resulting from *perceptions* of threat and characterized by a *perceived* inability to predict, control, or obtain desired results in upcoming situations.
- Anxiety can be a normal response to a threatening situation as well as a problematic response.
  - State vs. trait
  - Fight or flight reaction
  - Does anxiety cause distress or interfere with daily living?

Anxiety and CHD

- Anxiety is often the stepchild to depression. As a result, the research on anxiety and CHD is still accumulating.
  - Individuals with high anxiety were at increased risk for CHD and cardiac death independent of demographic variables, biological risk factors, and health behaviors.
  - A study of over 49,000 men with any anxiety disorder diagnosis found a strong association with CHD and acute MI over a 37 year follow-up.
  - An observational study published earlier this year in the *Am. J of Cardiology* found in those with anxiety, there was
    - 41% greater risk of both CHD and mortality
    - 71% greater risk of stroke
    - 35% greater risk of CHF

Emdin et al. (2016), *Am. J of Cardiology*

Prevalence: Depression and/or Anxiety

- Prevalence of major depression in MI survivors and those with CAD or CHF is 20% and 15% in those having received a CABG.
  - This prevalence is 3 times greater than in the general population.
- Overall prevalence of anxiety in CHD patients is more than 15%. This is 2 – 3% higher than in the general population.
  - Prevalence by disorder ranges from 1.8% for OCD to 7.78% for GAD.
- Depression and anxiety occur in roughly the same numbers in individuals with CHD. Anxiety and depression are highly comorbid.
  - Prevalence of the combined disorders is roughly 49%.

Who Is at Risk?

- First time depressed individuals with CHD vs those with established depression are at higher risk for negative events.
- Those individuals who become depressed as a result of an MI are at greater risk than those with established depression.
- Patients who do not respond to antidepressant therapy and experiencing anxiety have greater mortality and recurrent cardiac events.

Underlying Mechanisms

- Heredity/biological
- Environment/Psychological

Biological Mechanisms

- Advances in biological psychiatry underscore the neurochemical, neuroendocrine, and neuroanatomic alterations in those diagnosed with depression and anxiety and document the relationship between CHD and these conditions based on:
  - Hypothalamic-pituitary-adrenal (HPA) axis and sympathomedullary hyperreactivity
    - Adrenal dysregulation which results in excess secretion of norepinephrine (adrenaline)
  - Ventricular instability and resultant myocardial ischemia
  - Platelet receptors and/or reactivity
  - Reduced heart rate variability
  - Increased levels of catacholamines (stress hormones) and inflammation (C-reactive protein and other markers)

Psychological Factors

- **Intolerance of uncertainty**: information is readily available when in the hospital and the hospital is a “safe” place.
  - Once home, uncertainty about how to engage in problem-oriented coping skills is less clear. Fears related to prognosis, symptoms, etc. can also factor in as can lack of motivation.
- **Less than effective coping** may predominate resulting in excessive:
  - Heart-focused attention
  - Avoidance
  - Worry or fear about symptoms
  - Reassurance seeking
- Making **behavioral changes** isn’t easy!

Consequences

- Psychological and biological factors can interact.
- Without intervention, symptoms of anxiety and depression persist for long periods (8 yrs for depression; 9 – 23 yrs for anxiety) before people get help.
  - Decreased quality of life
  - Those with CHD and depression and/or anxiety have higher primary and secondary health care costs including:
    - Higher hospital readmission rates
    - Higher rates of post-operative complications
    - Greater use of the health care system
    - Increased risk for a subsequent cardiac event
    - Decreased time at work, with family, etc.
    - Greater caregiver burden

To Treat or Not to Treat

- Depression treatment studies have produced mixed results.
  - The majority of these studies have emphasized the use of psychiatric medications not evidence based psychotherapy making it hard to draw conclusions.
- There are far fewer treatment outcome studies examining anxiety in individuals with CHD.
- Current research using the Ohio Medicaid database informs us that in individuals with an established CHD diagnosis and who have an anxiety disorder, psychological treatment exerts a highly significant protective effect on hospital readmissions, ER visits, and death.

When to Treat

- Obviously, if you are depressed and/or anxious, treatment may be indicated.
- Consider whether anxiety or depression was a problem before you knew you had CHD, after the CHD diagnosis, and how long these symptoms have persisted.
- Remember, it's normal to feel frightened or depressed if you are having a procedure, surgery, receiving a new diagnosis, or have to make significant lifestyle changes.
- Is anxiety and/or depression interfering with your life or are these symptoms causing you distress?
  - Do family and friends keep asking, "Are you OK?"

Knowing When to Get Help

- How long is it taking for you to bounce back to baseline? The longer you have been grappling with anxiety and/or depression, the greater the likelihood you may need to get professional help. Consider getting help if:
  - You are preoccupied with symptoms and even if you know a sensation is normal, it causes you excessive concern, panic, etc.
  - Your quality of life affected.
  - You're not motivated or afraid to do things you typically enjoy.
  - You are irritable a lot of the time.
  - You can't stop worrying – you lie awake at night worrying.
  - You feel like giving up or hurting yourself.
  - Your family and friends are concerned.

What You Can Do to Help Yourself

- Are there restrictions on your lifestyle?
  - Activity/exercise
  - Fluids
  - Sodium
- Restrictions can cause you to feel deprived, angry, and immobilized or you can find ways to creatively cope?
- Rather than avoid or seek out reassurance, can you
  - Develop a list of pleasurable activities you can engage in;
  - Do things that give you a sense of accomplishment;
  - Practice skills that keep you present focused vs ruminating on the past or worrying about the future.
  - Be part of the solution and track your progress.

What We Can Do to Help

- **Behavioral Cardiology**
  - Our services are slowly integrating at the Ross.
    - Inpatient services: Currently a part of the CHF Consult Service but also provide psychological services throughout the Ross.
    - If you are at the Ross, ask to see us.
    - Ross Ambulatory Clinic (work in progress)
    - Offices at Harding for outpatient services
  - Collaborative Care model.
    - This is a treatment model that has had great success in primary care.
    - Hoping to adopt this model to specialty (cardiology) care. Mental health professionals will be working shoulder to shoulder with your cardiologist.