Workshop IV: Psychological Approach in Managing Cardiac Anxiety
7th Asian Preventive Cardiology & Cardiac Rehabilitation Conference cum 11th Certificate Course in Cardiac Rehabilitation

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What is Cardiac Anxiety?

Limited research and literature!

DSM-V Definition

- Anxiety Disorder Due to Another Medical Condition
- A. Panic attacks or anxiety is predominant in the clinical picture.
- B. There is evidence from the history, physical examination, or laboratory findings that the disturbance is the direct pathophysiological consequence of another medical condition.
- C. The disturbance is not better explained by another mental disorder.
- D. The disturbance does not occur exclusively during the course of a delirium.
- E. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
- Reference: American Psychiatric Association, Diagnostic And Statistical Manual of Mental Disorders, Fifth Edition.

Diagnostic Features

- 1. Presence of a clear temporal association between the onset, exacerbation, or remission of the medical condition and the anxiety symptoms.

- 2. Presence of features that are atypical of a primary anxiety disorder (e.g., atypical age at onset or course).

- 3. Evidence in the literature that a known physiological mechanism causes anxiety.

- Reference: American Psychiatric Association, Diagnostic And Statistical Manual of Mental Disorders, Fifth Edition.

Non-Cardiac Chest Pain

- Relationship between anxiety, usually in the form of panic disorder and chest pain.

- Absence of clinically significant heart disease.

What is the approach to cardiac anxiety?

The Clinical Approach

- 1. History taking
- 2. Physical examination
- 3. Laboratory findings
- 4. Assessment of severity of anxiety symptoms and the level of disability

The Differential Diagnoses

- Delirium
- Substance-/Medication-Induced Anxiety Disorder
- Panic Disorder
- Generalized Anxiety Disorder
- Illness Anxiety Disorder
- Adjustment Disorder
- Major Depressive Disorder

Clinical Instruments for Cardiac Anxiety

Cardiac Anxiety Questionnaire

- Assesses the interpretation of cardiac symptoms and sensations as well as related behaviours
- 18-item self-report inventory
- Five-point Likert-type scale
- 0 (never) to 4 (always)
- The higher the scores the greater the cardiac anxiety
- No reversed scored items
- Three components: fear about heart sensations, avoidance of activities believed to elicit cardiac symptoms, and heart-focused attention and monitoring
- Reference: Eifert GH, Thompson RN, Zvolensky JJ, Edwards K, Haddad JH, Frazer NL, Kavig J. The Cardiac Anxiety Questionnaire: Development and preliminary validity. Behaviour Research and Therapy 2000a;38:1039–1053.

Cardiac Anxiety Questionnaire

- 1. I pay attention to my heart beat
- 2. I avoid physical exertion
- 3. My racing heart wakes me up at night
- 4. Chest pain/discomfort wakes me up at night
- 5. I take it easy as much as possible
- 6. I check my pulse
- 7. I avoid exercise or other physical work
- 8. I can feel my heart in my chest
- 9. I avoid activities that make my heart beat faster
- 10. If tests come out normal, I still worry about my heart

Cardiac Anxiety Questionnaire

- 11. I feel safe being around a hospital, physician or other medical facility
- 12. I avoid activities that make me sweat
- 13. I worry that doctors do not believe my chest pain/discomfort is real When I have chest discomfort or I feel my heart is beating fast
- 14. I worry that I may have a heart attack
- 15. I have difficulty concentrating on anything else
- 16. I get frightened
- 17. I like to be checked out by a doctor
- 18. I tell my family or friends

Cardiac Anxiety Questionnaire

- Attention
  - 1. I pay attention to my heart beat
  - 3. My racing heart wakes me up at night
  - 4. Chest pain/discomfort wakes me up at night
  - 6. I check my pulse
  - 8. I can feel my heart in my chest

Cardiac Anxiety Questionnaire

- Avoidance
  - 2. I avoid physical exertion
  - 5. I take it easy as much as possible
  - 7. I avoid exercise or other physical work
  - 9. I avoid activities that make my heart beat faster
  - 12. I avoid activities that make me sweat

Cardiac Anxiety Questionnaire

- Fear
    - 10. If tests come out normal, I still worry about my heart
    - 11. I feel safe being around a hospital, physician or other medical facility
    - 13. I worry that doctors do not believe my chest pain/discomfort is real When I have chest discomfort or I feel my heart is beating fast
    - 14. I worry that I may have a heart attack
    - 15. I have difficulty concentrating on anything else
    - 16. I get frightened
    - 17. I like to be checked out by a doctor
    - 18. I tell my family or friends

Generic Questionnaire

- Generalized Anxiety Disorder-7
- Hamilton Anxiety Rating Scale
- Beck Anxiety Inventory
- Hospital Anxiety and Depression Scale
- State-Trait Anxiety Inventory
- Anxiety Sensitivity Index

Why is it important to manage cardiac anxiety?

ESCAPE study

- Epidemiological Study of Acute Coronary Syndromes and the Pathophysiology of Emotions study
- Objective: To assess the 2-year cardiac prognostic importance of the DSM-IV–based diagnoses of major depressive disorder (MDD) and generalized anxiety disorder (GAD) and self-report measures of anxiety and depression and their co-occurrence.
- Reference: Nancy Frasure-Smith, Francois Lesperance. Depression and Anxiety as Predictors of 2-Year Cardiac Events in Patients With Stable Coronary Artery Disease. Arch Gen Psychiatry. 2008;65(1):62-71

ESCAPE study

- Study Design: Two-year follow-up; 804 patients; stable CAD (649 men); Beck Depression Inventory II (BDI-II), the anxiety subscale of the Hospital Anxiety and Depression Scale (HADS-A), Structured Clinical Interview for DSM-IV (masked to self-reports); 2 months after acute coronary syndromes.

- Main Outcome Measures: Major adverse cardiac events (MACEs) (cardiac death, myocardial infarction, cardiac arrest, or non-elective revascularization); 2 years after baseline.

- Reference: Nancy Frasure-Smith, Francois Lesperance. Depression and Anxiety as Predictors of 2-Year Cardiac Events in Patients With Stable Coronary Artery Disease. Arch Gen Psychiatry. 2008;65(1):62-71

ESCAPE study

- Conclusion: Anxiety and depression predict greater MACE risk in patients with stable CAD, supporting future research into common genetic, environmental, and pathophysiologic pathways and treatments.

- Reference: Nancy Frasure-Smith, Francois Lesperance. Depression and Anxiety as Predictors of 2-Year Cardiac Events in Patients With Stable Coronary Artery Disease. Arch Gen Psychiatry. 2008;65(1):62-71

UNWIND study

- Randomized clinical trial
- Patients with CHD who are at increased risk for adverse events because of comorbid anxiety.
- 150 participants with CHD and elevated anxiety symptoms and/or with a diagnosed anxiety disorder
- Randomly assigned to 12 weeks of aerobic exercise (3×/wk, 35 min, 70–85% VO2peak), escitalopram (5–20mg qd), or placebo.
- Reference: James A. Blumenthal et al. Treatment of Anxiety in Patients with Coronary Heart Disease: Rationale and Design of the UNWIND Randomized Clinical Trial. Am Heart J. 2016 Jun; 176: 53–62.

UNWIND study

- Before and after 12 weeks of treatment, participants will undergo assessments of anxiety symptoms and CHD biomarkers of risk (measures of inflammation, lipids, hemoglobin A1c, heart rate variability, and vascular endothelial function).

- Primary outcomes: post-intervention effects on symptoms of anxiety and CHD biomarkers.

- Secondary outcomes: clinical outcomes (cardiovascular hospitalizations and all-cause death) and measures of quality of life.

- Reference: James A. Blumenthal et al. Treatment of Anxiety in Patients with Coronary Heart Disease: Rationale and Design of the UNWIND Randomized Clinical Trial. Am Heart J. 2016 Jun; 176: 53–62.

UNWIND study

- Conclusions—The UNWIND trial (ClinicalTrials.gov NCT02516332) will evaluate the efficacy of aerobic exercise and escitalopram for improving anxiety symptoms and reducing risk for adverse clinical events in anxious CHD patients.

- Reference: James A. Blumenthal et al. Treatment of Anxiety in Patients with Coronary Heart Disease: Rationale and Design of the UNWIND Randomized Clinical Trial. Am Heart J. 2016 Jun; 176: 53–62.

Cardiac anxiety in myocardial infarction

- Both general anxiety and depression are associated with cardiac prognosis in MI-patients.
- 237 hospitalized MI-patients
- assessed with Cardiac Anxiety Questionnaire
- Cross-sectional associations
- possible trajectories of cardiac anxiety in the year post-MI (by latent class-analysis)
- association with quality of life
- prognostic association of cardiac anxiety with major adverse cardiac events (MACE)
- Reference: M.H.van Beek, R.C.Oude Voshaar, G.Pop, A.E.Speckens. Aspects of cardiac anxiety in patients with a myocardial infarction. European Psychiatry Volume 33, Supplement, March 2016, Page S152

Cardiac anxiety in myocardial infarction

- Results:

- Higher cardiac anxiety was associated with more psychological distress but lower severity in cardiac injury.

- In the year post-MI, higher cardiac anxiety was associated with worse quality of life.

- CAQ score significantly predicted MACE in a five-year-follow-up period, even after adjustment for age, cardiac disease severity and depressive symptoms .

- Reference: M.H.van Beek, R.C.Oude Voshaar, G.Pop, A.E.Speckens. Aspects of cardiac anxiety in patients with a myocardial infarction. European Psychiatry Volume 33, Supplement, March 2016, Page S152

Cardiac anxiety in myocardial infarction

- Cardiac anxiety is an important and potentially modifiable factor in the treatment of MI-patients

- Cardiac anxiety is prevalent and associated with quality of life and cardiac prognosis.

- Reference: M.H.van Beek, R.C.Oude Voshaar, G.Pop, A.E.Speckens. Aspects of cardiac anxiety in patients with a myocardial infarction. European Psychiatry Volume 33, Supplement, March 2016, Page S152

Non-cardiac chest pain

Non-cardiac chest pain

- Many studies have shown that cardiac anxiety when occurring in the absence of coronary artery disease is common and quite costly.
- Four-factor solution of CAQ was judged to provide the best fit with the results reflecting the following factor composition:
  - heart focused attention
  - avoidance of activities that bring on symptoms
  - worry or fear regarding symptoms
  - reassurance-seeking
- Reference: Marker CD et al. Cardiac Anxiety in people with and without Coronary Atherosclerosis. Depress Anxiety. 2008 ; 25(10): 824–831.

Non-cardiac chest pain

- The group without coronary atherosclerosis had significantly higher mean scores on their attention and worry/fear factors

- People without a diagnosed cardiac condition pay more attention to and worry more about their cardiac related symptoms than those people who have coronary atherosclerosis.

- Reference: Marker CD et al. Cardiac Anxiety in people with and without Coronary Atherosclerosis. Depress Anxiety. 2008 ; 25(10): 824–831.

Management

- These findings are consistent with models of anxiety that state that people who are hypervigilent to and have a negative (i.e., anxious) affective response to physical symptoms are more likely to make incorrect judgments about what those symptoms mean (e.g., Clark, 1988; Cox, 1996; Eifert, 1992; Eifert, Hodson, Tracey, Seville, & Gunawardane, 1996; Rapee, & Medoro, 1994).

- There is a greater chance of making a cognitive or interpretive error when one is excessively focused on either potential health related problems or the potential for catastrophic outcomes.

- Reference: Craig D. Marker, Cheryl N. Carmin, and Raymond L. Ownby. Cardiac Anxiety in people with and without Coronary Atherosclerosis. Depress Anxiety. 2008 ; 25(10): 824–831.

Management

NICE guideline

- Benzodiazepines should not be used beyond 2-4 weeks

- An SSRI should be used as first line.

- SNRIs and pregabalin are alternative choices.

- High-intensity psychological intervention and self-help (based on CBT principles) should be encouraged.

- Reference: National Institute for Health and Clinical Excellence. Generalized anxiety disorder and panic disorder (with or without agoraphobia) in adults. Clinical Guideline 113, 2011. http://guidance.nice.org.uk/CG113

Cognitive Behavioural Therapy

CBT model
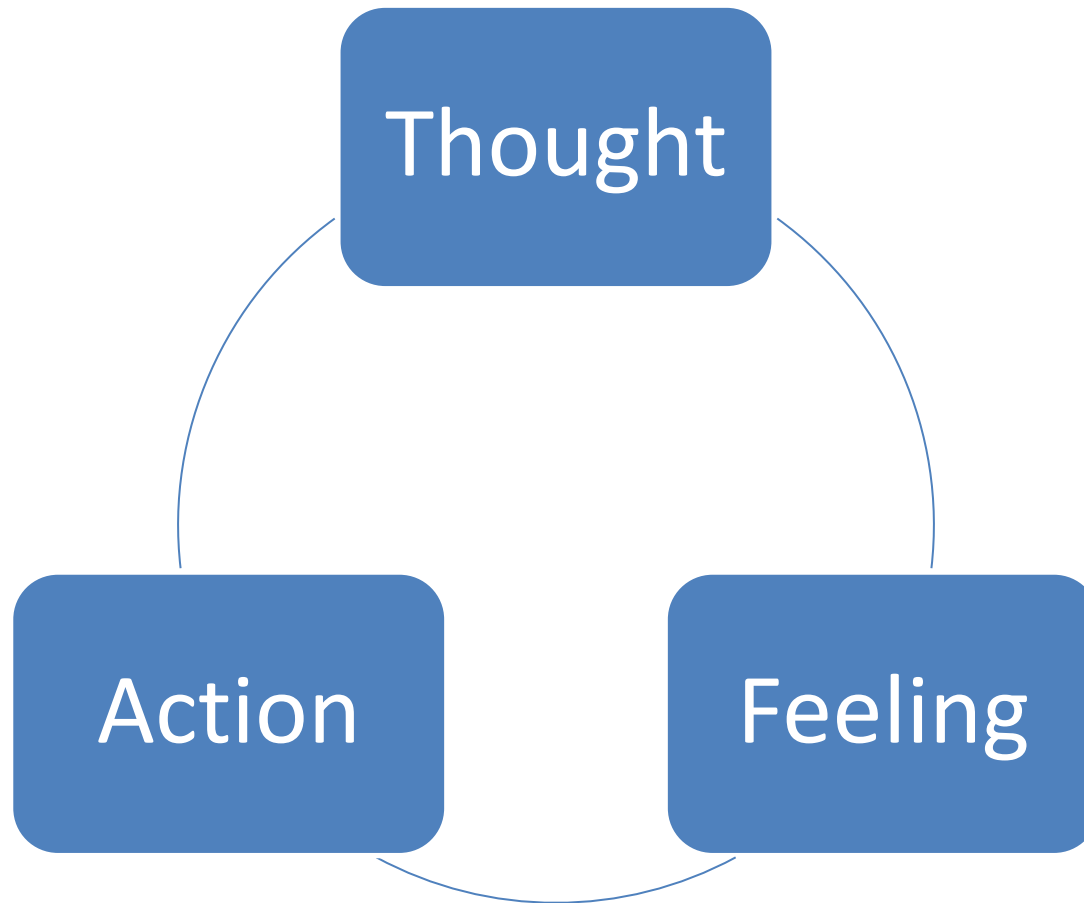
Cognitive Behavioural Therapy

- Providing education about symptoms and helping patients to differentiate between anxiety and cardiac symptoms.

- Exposing clients to their threatening physical symptoms (i.e., interoceptive exposure).

- coupled with cognitive strategies to reevaluate their beliefs about the meaning of these symptoms.

- more realistic appraisal of core beliefs regarding these symptoms.

- Reference: Craig D. Marker, Cheryl N. Carmin, and Raymond L. Ownby. Cardiac Anxiety in people with and without Coronary Atherosclerosis. Depress Anxiety. 2008 ; 25(10): 824–831.

Pharmacotherapy

Pharmacotherapy for GAD

- First-line treatment:
  - SSRIs (may initially exacerbate symptoms, a lower starting dose is often required: fluoxetine and sertraline)
  - Mirtazapine
  - Venlafaxine
  - Duloxetine
  - Pregabalin
- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Pharmacotherapy for GAD

- Other treatments (less well tolerated, unlicensed or weaker evidence base)
  - Agomelatine
  - Buspirone (delayed onset of action)
  - Hydroxyzine
  - Quetiapine
  - Beta-blocker (useful for somatic symptoms, particularly tachycardia)
  - Some TCAs (e.g. imipramine, clomipramine)
  - MAOIs
- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Cardiac effects of antidepressants

- SSRI are generally recommended in cardiac disease.
- SSRI: Beware of antiplatelet activity and cytochrome-mediated interactions with co-administered cardiac drugs.
- SSRI: may protect against cardiovascular disease.
- Mirtazapine is a suitable alternative.
- Both SSRIs and mirtazapine have either a neutral or beneficial effect on mortality, post myocardial infarction.
- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Antidepressant-induced arrhythmia

- Tricyclics (but not lofepramine) have an established link to ion channel blockade and cardiac arrhythmia.

- Non-tricyclics generally have a very low risk of inducing arrhythmia.

- Sertraline is recommended post MI, but other SSRIs and mirtazapine are also likely to be safe.

- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Antidepressant-induced arrhythmia

- Bupropion, citalopram, escitalopram, moclobemide, lofepramine and venlafaxine should be used with caution or avoided in those at risk of serious arrhythmia (those with heart failure, left ventricular hypertrophy, previous arrhythmia or MI).

- An ECG should be performed at baseline and 1 week after every increase in dose if any of these drugs are used in at-risk patients.

- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Antidepressant-induced arrhythmia

- TCAs (with the exception of lofepramine) are best avoided completely in patients at risk of serious arrhythmia.

- If use of a TCA cannot be avoided, an ECG should be performed at baseline, 1 week after each increase in dose and periodically throughout treatment.

- Frequency will be determined by the stability of the cardiac disorder and the TCA (and dose) being used; advice from cardiology should be sought.

- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Antidepressant-induced arrhythmia

- The arrhythmogenic potential of TCAs and other antidepressants is dose-related.

- Consideration should be given to ECG monitoring of all patients prescribed doses towards the top of the licensed range and those who are prescribed other drugs that through pharmacokinetic or pharmacodynamic mechanisms may add to the risk posed by the TCA.

- Reference: David Taylor, Carol Paton, Shitij Kapur. Prescribing Guidelines in Psychiatry 12th Edition. The Maudsley. Wiley Blackwell.

Guided Imagery

Guided Imagery

- evoke and generate mental images
- simulate or re-create the sensory perception of sights, sounds, tastes, smells, movements, and images associated with touch, such as texture, temperature, and pressure, as well as imaginative or mental content
- in the absence of the stimuli to which correlating sensory receptors are receptive

Mindfulness

Mindfulness

- the psychological process of bringing one's attention to experiences occurring in the present moment

- through the practice of meditation and other training

- to reduce depression symptoms, stress, anxiety, and for the treatment of drug addiction

Conclusions

- Anxiety is highly prevalent among patients with coronary heart disease.
- The severity of anxiety is associated with prognosis in cardiac rehabilitation.
- Early identification of cardiac anxiety is necessary.
- Cardiac Anxiety Questionnaire is an example of assessment instrument.
- Combined pharmacotherapy and psychotherapy are beneficial for rehabilitation.

References

- American Psychiatric Association, Diagnostic And Statistical Manual of Mental Disorders, Fifth Edition.
- Craig D. Marker, Cheryl N. Carmin, and Raymond L. Ownby. Cardiac Anxiety in people with and without Coronary Atherosclerosis. Depress Anxiety. 2008 ; 25(10): 824–831.
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- National Institute for Health and Clinical Excellence. Generalized anxiety disorder and panic disorder (with or without agoraphobia) in adults. Clinical Guideline 113, 2011. http://guidance.nice.org.uk/CG113

Thank you!

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