Non-Pharmacological Approaches to Treating Post Stroke Depression

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Disclosures

• I have no disclosures related to this presentation.
Objectives

- Identify one possible etiological pathway in development of Post Stroke Depression (PSD)
- Identify risks associated with PSD
- Identify non-pharmacological treatments for PSD
- Gain a basic understanding of a variety of non-pharmacological treatments for PSD
- Identify risks and limits to various treatments for PSD

Post Stroke Depression (PSD)

- Affects approx. 1/3 stroke survivors
  - Frequency is highest in the first year
- Consistent adverse effect on outcomes
  - Increased risk for suboptimal recovery and recurrent vascular events
  - Worse quality of life
  - Increased mortality
  - Higher rates of healthcare use after stroke
    - Longer inpatient LOS and higher outpatient and inpatient use in the 12 months after stroke.
Downstream Consequences

- Reduced participation in rehab
- Maladaptive thoughts
- Increased physical and cognitive impairment
- Significant predictor of ability to return to work in young adults

Differential Dx (DSM-5)

- Major depressive disorder:
  - 5 or more symptoms nearly every day for 2+ weeks:
    One symptom must be: 1) Depressed mood or 2) loss of interest
    • Depressed mood most of the day
    • Markedly diminished interest or anhedonia
    • Significant weight loss (unintentional)
    • Insomnia (typical) or hypersomnia (atypical)
    • Psychomotor agitation or slowing
    • Fatigue
    • Feelings of worthlessness or excessive / inappropriate guilt
    • Diminished ability to think, concentrate, make decisions
    • Recurrent thoughts of death or suicidal ideation

- Depressive disorder due to another medical condition:
  - Prominent and persistent period of depressed mood or markedly diminished interest or pleasure in all, or almost all, activities
    • With depressive features, major depression-like episode, mixed
    • Onset can be acute or weeks to months after CVA
Differential Dx (cont.)

- Adjustment disorder
  - Number and quality of depressive symptoms will be less
- Post stroke apathy syndrome
  - Will not have mood component
- Post stroke emotional lability (pseudobulbar affect)
  - Can be mistaken for delirium, bipolar disorder
  - Will not have associated happiness or sadness
- Hypoactive delirium, dementia

Issues in Diagnosis

- Can be overly diagnosed because of somatic symptoms caused by stroke
  - Psychomotor retardation
  - Disturbances in
    - Appetite
    - Sleep
    - Sexual interest
- Can be under diagnosed, especially in those with cognitive impairment
Etiology

- Psychological reaction to life-threatening illness
- Physiological consequences of stroke
  - Lesion location
  - Neurotransmitters
  - Inflammatory cytokine

Etiology

- Lesion location
  - Frontal, subcortical, basal ganglia
  - Left hemisphere, proximity to frontal pole
  - Hospitalized and <28 days post stroke: left hemisphere
  - Community samples and after 1-4 months post stroke: right hemisphere
  - Silent infarcts have also been linked to depression
Etiology

- Neurotransmitters
  - Ischemia-induced enzyme inhibition leads to decreased monoamine synthesis
  - Metabolite of serotonin is low in CSF of patients with PSD

- Inflammatory cytokines
  - Stroke induces inflammatory response
  - Inflammatory cytokines alter serotonin function
The Good News

• Approaches to treating PSD have significant overlap with treatment for other forms of depressive disorders
  - Medications
  - Psychotherapy
  - Combined approach
  - “other”

Psychotherapy

• Literature has limited support for the use of psychotherapy as monotherapy in treatment of PSD
• Reasonable to consider as a first line treatment for depressive d/o post stroke, especially considering body of evidence demonstrating efficacy in primary depressive disorder
• Can also use as adjunctive therapy
• Often helpful to address peripheral and/or premorbid issues that contribute to post stroke difficulties
Psychological Therapy

- Cognitive Behavioral Therapy
- Problem Solving Therapy
- Supportive Therapy
- Motivational Interviewing

Cognitive Behavioral Therapy (CBT)

- Negative thoughts and beliefs are corrected and depressive sx will be improved
- Increases pleasant and enjoyable events to improve mood
- “What you think and do affects the way you feel”
Appreciating Levels of Thought

- Conscious thoughts
  - Rational thoughts and choices that are made with full awareness
- Automatic thoughts
  - Flow rapidly so that you may not be fully aware of them and therefore unable to check them for accuracy. May not be logical or reality based
- Schemas
  - Core beliefs and personal rules for processing information. Shaped by life experience

ABCDE model of CBT

- Activating Event
  - What happened?
  - What’s stressing me out?
- Belief
  - What is my negative self talk?
  - Distorted/irrational thinking style
- Consequence
  - What am I feeling?
  - What is my behavior as a result
- Dispute - Counter thought
  - What realistic and grounding statement could I use instead?
  - Alternative ways of thinking that is reality based
- Emotional Consequence
  - How do I feel now?
  - How have my thoughts changed?
CBT-Cognitive Distortions

- Filtering
- Polarized Thinking
- Overgeneralization
- Jumping to Conclusions
- Catastrophizing
- Personalization
- Control Fallacies

- Fallacy of Fairness
- Blaming
- “Shoulds”
- Emotional Reasoning
- Fallacy of Change
- Global Labeling
- Always Being Right
- Heaven’s Reward Fallacy

Behavioral Activation Therapy for Depression After Stroke (BEADS)

- Specifically developed individualized CBT like approach for PSD
- Active monitoring
- Activity scheduling
- Graded task assignments
- 10-15 sessions over 4 months
Problem Solving Therapy (PST)

- Reduces mental disability
- Mainly efficacious in elderly patients
- Effect continues after treatment ends
- Has been shown to reduce mortality associated with PSD in comparison to escitalopram

Problem Solving Therapy for PSD

- 4 step approach
  - Define problem and goal
  - Generate multiple solutions
  - Select a solution
  - Implement and evaluate
- Improvements in task-oriented coping
- Improvements HRQoL recovery and avoidant coping
Supportive Therapy

- Patient centered psychotherapy
- Support is based on patients problems
  - Patients address problems without direct input from therapists
  - No therapeutic strategy other than active listening and offering support
- Not as efficacious as PST in treating mental disability in elderly

Motivational Interviewing (MI)

- Person-centered, provider guided method for enhancing *intrinsic motivation* to change by exploring and resolving ambivalence
- Direct persuasion is not effective
- Readiness to change is not a trait, rather it fluctuates within the interpersonal interaction
- Therapy is more like a partnership
Motivational Interviewing

- Has been shown to lead to an improvement in mood 3 months after stroke
- Can help patients make healthier lifestyle changes/reduce risk factors associated with stroke
  - Smoking
  - Diet
  - Exercise
- Develop/improve confidence and provide impetus to change

Eye Movement Desensitization and Reprocessing

- EMDR for short
- Uses, among other techniques, alternating bilateral stimulation (BLS; e.g., eye movement, auditory, tactile) while patients internally attend to memories, emotions, cognitions, images, and bodily sensations.
EMDR

• Originally used for the treatment of post-traumatic stress disorder (PTSD)
  - Combat Trauma
  - Sexual Trauma
  - Medical Trauma
• Has been used in “normal” individuals for stress reduction

EMDR-8 phase approach

• History taking
• Client preparation
• Assessment
• Desensitization
• Installing
• Body scan
• Closure
• Reevaluation
EMDR for PSD with Aphasia

- Blind to therapist (B2T) protocol was developed for those unwilling/unable to describe memories during EMDR due to control, shame/embarrassment, cultural reasons, or language barriers.
- EMDR has been shown to be effective for depression in those with comorbid aphasia.
  - Limited by case studies/series

Verbal/Linguistic Approaches

- Literature Therapy
  - Expressive therapy that serves as tool to identify emotional status of patient and then treat
- Poetry Therapy
  - Correlates emotional sentiments to feelings in poetry and use metaphor to improve self-awareness
- Story Therapy
  - Patients create story line that they wish to live, which can help change depressive sx's to a more positive experience in the story
Non-Verbal Approaches

- **Music Therapy**
  - Can exert influence on blood pressure, heart rate and respiration
  - Listening to music can generate emotions as well as motor movements, increasing change in cortical plasticity and plastic adaption
  - 64% of stroke patients in music therapy showed improvements in mood

- **Art Therapy**
  - Free self-expression through painting, drawing or other medium
  - About the process, NOT the product
  - Has been shown to help with depressive sx
    - Loss of appetite
    - Sleep disorders
    - Lack of confidence
    - Over eating

Physiotherapies

- **Exercise**
  - Increases dopamine and brain derived neurotropic factor and subsequently mood
  - Improve functional performance and quality of life, which reduces CV risk and improves adherence to rehab
Physiotherapies

• Weight management
  - Reduces depression in “normal” population as well as in PSD
  - Can motivate overweight to reduce weight by up to 5% and improve health outcomes
    • Diet
    • Sleep
    • Physical activity

• Diet
• Sleep
• Physical activity

Physiotherapies

• Virtual Reality (VR)
  - Shown to be effective at improving physical function in survivors of stroke
  - Stand up and go
  - 30 sec sit to stand
  - Timed 30ft (10m) walk
  - 6 min walk test
Physiotherapies

- Yoga
  - Extends health and well-being and awareness about oneself
  - Daily practice improves
    - Plasticity
    - Muscle strength
    - Aerobic capacity and vital capacity
    - Reduces melancholic sx

“Non-Invasive” Brain Stimulation

- Repetitive Transcranial Magnetic Stimulation (rTMS)
- Transcranial Direct Current Stimulation (tDCS)
- Have been shown to be effective, especially for treatment resistant PSD

- Electroconvulsive Therapy (ECT)
  - Has been shown to be successful in PSD, especially when patient is resistant to other treatments

*represent more substantial increase in risk as compared to other techniques mentioned
Summarizing

• It can be difficult to differentiate PSD from other diagnosis that have depressive features
• Survivors of stroke are likely to have a multitude of concerns
  - Adjustment to illness
  - Premorbid issues
  - Family/social concerns
  - Work/financial concerns
  - And…
• While the literature may not support the effectiveness of psychotherapy for treating PSD specifically, Psychotherapy is demonstrated to be effective for depressive d/o, adjustment, etc., and most stroke survivors and family experience these concerns
• A multidisciplinary approach to working with stroke survivors and family/support system is likely to have most long lasting effects and lead to most comprehensive recovery process

Thank you

• Questions

*references available on request
Cleveland Clinic

Every life deserves world class care.