Post Stroke Depression: Screening and Assessment Tools

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• Disclosures:

  • Brooke Kearins – sub PI in SOCRATES Study with Astra Zeneca

  • Jean Luciano – Genentech Speakers’ Bureau
Objectives

• Discuss the epidemiology and risk profiles for post stroke depression
• Verbalize an understanding of depression assessment tools
• Discuss interventions and treatment strategies

The Diagnostic and Statistical Manual (DSM) IV

• Characterizes post-stroke depression as “mood disorder due to a general medical condition (i.e. stroke)”.
• Major depression occurs in up to 25% of patients.
• Minor depression occurs in up to 30% of patients following stroke.
Prevalence

• **Post-stroke depression** (PSD) is considered the most frequent and important neuropsychiatric consequence of stroke. Approximately one-third of stroke survivors experience major depression.

Course of PSD

• About 40% of those with PSD will develop symptoms within 3 months.

• 30% of non-depressed patients become depressed upon discharge from the hospital.

• At 6 months, a majority of patients with PSD continued to have symptoms.
GENDER

• Post-stroke depression is highly prevalent among both men and women.

• More common in women. Women were twice as likely to experience post-stroke depression than men. (May be response bias).

Theories

• A primary biological mechanism with stroke affects neural circuits involved in mood regulation which in turn causes post-stroke depression.
  • VS

• Post stroke depression is caused by social and psychological stressors that emerge as a result of stroke.
**Biological**

- Stroke patients show a higher rate of depression compared to orthopedic patients with disabilities of comparable severity.
- Several studies proposed an association with specific lesions (left anterior and basal ganglia lesions) and occurrence of post stroke depression.
- Patients with anosognosia who are unaware of their disability still develop post stroke depression.

**Stroke Location and Depression**

- Not well understood
- 2 meta-analyses have studied this
  - looked at 13 studies examining lesion location and PSD
- 6 studies found no difference in depression between right and left hemisphere lesions
- 2 found right sided lesions more likely
- 4 found left sided lesions more likely
Predicting Post Stroke Depression

• **Psychosocial factors**
  - Pre-stroke history of depression
  - Personality and coping style
  - Inadequate social support, particularly significant other.

• Level of disability

• Low Barthel Index score

• Age <68 years

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**Barthel Scale**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEEDING</td>
<td></td>
</tr>
<tr>
<td>0 = unable</td>
<td></td>
</tr>
<tr>
<td>5 = needs help cutting, spreading butter, etc., or requires modified diet</td>
<td></td>
</tr>
<tr>
<td>10 = independent</td>
<td></td>
</tr>
<tr>
<td>BATHING</td>
<td></td>
</tr>
<tr>
<td>0 = dependent</td>
<td></td>
</tr>
<tr>
<td>5 = independent (or in shower)</td>
<td></td>
</tr>
<tr>
<td>GROOMING</td>
<td></td>
</tr>
<tr>
<td>0 = needs to help with personal care</td>
<td></td>
</tr>
<tr>
<td>5 = independent face/hair/teeth/shaving (implements provided)</td>
<td></td>
</tr>
<tr>
<td>DRESSING</td>
<td></td>
</tr>
<tr>
<td>0 = dependent</td>
<td></td>
</tr>
<tr>
<td>5 = needs help but can do about half unaided</td>
<td></td>
</tr>
<tr>
<td>10 = independent (including buttons, zips, laces, etc.)</td>
<td></td>
</tr>
<tr>
<td>BOWELS</td>
<td></td>
</tr>
<tr>
<td>0 = incontinent (or needs to be given enemas)</td>
<td></td>
</tr>
<tr>
<td>5 = occasional accident</td>
<td></td>
</tr>
<tr>
<td>10 = continent</td>
<td></td>
</tr>
<tr>
<td>BLADDER</td>
<td></td>
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<tr>
<td>0 = incontinent, or catheterized and unable to manage alone</td>
<td></td>
</tr>
<tr>
<td>5 = occasional accident</td>
<td></td>
</tr>
<tr>
<td>10 = continent</td>
<td></td>
</tr>
<tr>
<td>TOILET USE</td>
<td></td>
</tr>
<tr>
<td>0 = dependent</td>
<td></td>
</tr>
<tr>
<td>5 = needs some help, but can do something alone</td>
<td></td>
</tr>
<tr>
<td>10 = independent (on and off, dressing, wiping)</td>
<td></td>
</tr>
</tbody>
</table>
Barthel Scale

TRANSFERS (BED TO CHAIR AND BACK)
0 = unable, no sitting balance
5 = major help (one or two people, physical), can sit
10 = minor help (verbal or physical)
15 = independent ______

MOBILITY (ON LEVEL SURFACES)
0 = immobile or < 50 yards
5 = wheelchair independent, including corners, > 50 yards
10 = walks with help of one person (verbal or physical) > 50 yards
15 = independent (but may use any aid; for example, stick) > 50 yards ______

STAIRS
0 = unable
5 = needs help (verbal, physical, carrying aid)
10 = independent ______

TOTAL (0–100):

Symptoms of Depression

• Persistent sad, anxious or “empty” mood
• Feelings of hopelessness, pessimism
• Feelings of guilt, worthlessness, helplessness
• Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex
• Decreased energy, fatigue, being “slowed down”
• Difficulty concentrating, remembering, making decisions
• Insomnia, early-morning awakening, or oversleeping
• Appetite and/or weight changes
• Thoughts of death or suicide, or suicide attempts
• Restlessness, irritability
Diagnosis of PSD

- Difficult to reliably diagnose
- Post-stroke depression under-diagnosed in 50-80% of cases.
- Widespread belief that depression is simply an understandable psychological reaction or grief response.

IMPACT

- Poor functional recovery – may delay recovery by 2 years.
- Poor social outcomes.
- Reduced quality of life.
- Reduced rehabilitation treatment efficiency.
- Increased cognitive impairment.
- Increased mortality.
Mortality

• Patients with post stroke depression are 3.4 times more likely to die during a 10 year period after stroke than those without depression.

• Patients with post stroke depression and few social contacts have an even increased mortality rate.

Assessment of PSD:

• Clinical interview and history
• Collateral information from family and caregivers
• Observational standardized screening measure
• Self-reports standardized screening measure when appropriate
Issues In Use of Self-Report Screening Tools for PSD

• Anosognosia – lack of awareness may affect sensitivity and specificity of instruments.
• Physical and cognitive deficits may make use of these tools prohibitive.

Self-Report Screening Tools for Patients Without Communication Barriers

Geriatric Depression Scale (GRS)
• Designed for screening for depression in older individuals
• Good sensitivity and specificity in stroke patients but reports it is not well tolerated in hospitalized medical patients in part due to 30 items.
• Short form not evaluated in stroke population.
Self-Report Screening Tools for Patients Without Communication Barriers

• Beck Depression Inventory – (BDI-2)
  • Well validated and reliable
  • Easy to administer
  • Well validated and reliable
  • Easy to administer
  • Some difficulty with scale completion reported

• BDI – Fast Screen for Medical Patients
  -- Not validated in the stroke population

PHQ-2 & PHQ-9

• Comprising the first 2 items of the PHQ-9, the PHQ-2 inquires about the degree to which an individual has experienced depressed mood and over the past two weeks. Its purpose is not to establish final diagnosis or to monitor depression severity, but rather to screen for depression. Patients who screen positive should be further evaluated with the PHQ-9. The PHQ-2 has been validated in 3 studies.
Patient Health Questionnaire (PHQ2)

• Over the last 2 weeks, how often have you been bothered by any of the following problems?
  • Been bothered by feeling down, depressed, or hopeless?
  • Been bothered by little interest or pleasure in doing things?

PHQ-2

• Answer YES to either question, administer PHQ-9 or further evaluate depression.
• Answer NO to both, the screen is negative.
Patient Health Questionnaire
PHQ-9

In the past 2 weeks, how often are you bothered by....

• Little interest or pleasure in doing things.
• Feeling down, depressed or hopeless.
• Trouble falling or staying asleep, or sleeping too much.
• Feeling tired or having little energy.
• Poor appetite or overeating.
• Feeling bad about yourself or that you are a failure or have let yourself or your family down.
• Trouble concentrating on things, such as reading the newspaper or watching television.
• Moving or speaking so slowly that other people could have noticed. Or the opposite being so fidgety or restless that you have been moving around a lot more than usual.
• Thoughts that you would be better off dead, or of hurting yourself.

Scoring: Add up all checked boxes on PHQ-9

• Not at all = 0; Several days = 1; More than half the days = 2; Nearly every day = 3

• Depression Severity
  • Minimal depression : 1-4
  • Mild depression: 5-9
  • Moderate depression: 10-14
  • Moderately severe depression: 15-19
  • Severe depression: 20-27

• Interpretation of Total Score
Self-Report Screening Tools for Patients With Communication Barriers

Visual Analogue Mood Scale (VAMS)
- Eight cartoon face and verbal descriptions
- For stroke patients with communication disorders
- Not affected by neglect
- However, not validated yet in stroke population

Observational Scale

Aphasic Depression Rating Scale (ADRS)
- Designed to diagnose and monitor depression in patients with aphasia
- Training required to use instrument
- Provides good sensitivity and specificity for depression in patients with Aphasia.
Challenges

• Detection and Diagnosis often inconsistent.
• Compliance with guidelines for screening is poor.
• Identified barriers to routine screening include time pressures and concerns about screening tools.
• Follow up??

Treatment for Post-Stroke Depression

• Tricyclic antidepressants
• Selective Serotonin Reuptake Inhibitors
• Selective Serotonin-norepinephrine Inhibitors
• Psychostimulants
• Counseling and Psychotherapy
Considerations for Treatment with Antidepressant Medication

• Goal is to choose agent with lease potential for side effects and titrate slowly to improve tolerability and compliance with treatment.
• Some agents, such as mirtazapine, may be preferential to treat poor appetite or other vegetative symptoms in some patients.
• In patients with apathy and significant psychomotor retardation, consider initiating treatment with psychostimulant and then convert to SSRI/SSNRI.

Prophylactic Treatment to Prevent PSD

• Mirtazapine (Remeron) and Setraline (Zoloft) show promising results in the prevention of Post Stroke Depression.
Psychostimulants

• Limited research regarding use of psychostimulants
• May be beneficial, especially in patients with anorexia, apathy, and lethargy.

Psychostimulant study results
• Primary stimulants used were methylphenidate (Ritalin) and Dextroamphetamine
• 82% of patients improved with 77% showing marked improvement
• Quick response noted, about 2 days.
• Only 2% relapse during treatment
• 15% incidence of side effects
• No cases of anorexia, appetite improved with mood.

More to Come!

• Transcranial magnetic stimulation (TMS)
• Procedure that uses magnetic fields to stimulate nerve cells in the brain to improve symptoms of depression.
• Large electromagnetic coil is placed against your scalp near your forehead. The electromagnet used in TMS creates electric currents that stimulate nerve cells in the region of your brain involved in mood control and depression.
• Generally, sessions are carried out daily, five times a week for four to six weeks.
• The procedure will last about 40 minutes
Non-pharmacological Interventions

• Counseling and psychotherapy have show little efficacy early in the course of PSD.
• Psychotherapy more effective as adjustment issues emerge later in post-stroke recovery.
• Early intervention with structured group problem-solving interventions effective in improving quality of life and functioning in both patients and significant others.
• Psychotherapy with significant others has been shown to significantly improve functional outcomes for patients and may reduce post stroke depression.

Support Groups

• Stroke survivors
• Caregivers and support people.
• Topics
• Open sessions
Case Study

• Fran
• History and course
Why we do it!

• Email from a (two time) stroke survivor........
• I cannot make the meeting. But wanted input on the subjects. I am proud every time I wake up with a smile and go to therapy with optimism and see hope in the little changes. Like keeping my lips closed for two minutes or swallowing pudding. The trip is long and slow but I determine how depressed it will be. So I am proud of my optimism. Hope to see you all soon. Maybe the next meeting. Keep well Fran

References

QUESTIONS?

If I had an hour to solve a problem and my life depended on it, I would use the first 55 minutes determining the proper questions to ask.

Albert Einstein