

Post-Stroke Depression

Primary Care Stroke Update: What's New in Best Practice Prevention & Care

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Post Stroke Depression (PSD)

- “All patients with stroke should be screened for depression using a validated tool(Evidence Levels A)”¹
- Screening should take place where clinical presentation indicates, and at at all transition points:
 - upon admission to acute care, particularly if any evidence of depression or mood change is noted
 - before discharge to the community from acute care or during early rehabilitation if transferred to inpatient rehabilitation setting
 - periodically during inpatient rehabilitation
 - periodically following discharge to the community

PSD

- Patients identified as being at risk for depression during screening should be referred to a healthcare professional with expertise in diagnosis and management of depression in stroke patients [Evidence Level B]¹
- These patients should be referred to a psychiatrist or psychologist where available

1. Canadian Best Practice Recommendations for Stroke Care 2012 (section 7.3)

Post Stroke Depression

- Why screen?
 - Depressed stroke patients have a 3.4 times higher 10 year mortality compared with non-depressed stroke patients¹
 - Lesser functional recovery in patients with PSD²
 - Higher recovery of ADLs with patients who respond to treatment for PSD³
 - Reduced quality of life⁴

1. Morris Am J Psych 1993

2. Nanetti Disability and Rehab 2005

3. Chemerinski Stroke 2001

4. Kong Singapore Med J 2006

PSD: Prevalence

- Prevalence rates have varied due to methodological differences in studies
- Recent meta-analysis showed pooled prevalence of depression at any time after stroke¹
 - In population studies 22%
 - In hospital studies 30%
 - In rehabilitation studies 30%

PSD: Under diagnosed

- PSD is under diagnosed :
 - Prospective observational study of 13 centers in Ontario from Registry of the Canadian Stroke Network showed that 4.8% of stroke patients were diagnosed with depression while 6.7% treated were with a new antidepressant¹
- However, stroke units identify and treat PSD more often as compared to other units¹:
 - 5.2% vs 4% diagnosed with PSD
 - 7.8% vs 4.5% received a new prescription for an antidepressant

1. Herrman Int J Geriatric Psychiatry 2011

PSD: Risk Factors

- Disability secondary to stroke^{1,2}
- History of depression predating stroke³
- Cognitive impairment¹
- Anxiety²
- Social Isolation¹
- Conversely, depression itself is a risk factor for the occurrence of stroke with a prospective population based cohort study reflecting a $RR=1.73^4$

1. Ayerbe Stroke 2011
2. Morrison J Psychosom Res 2005
3. Caeiro J Psychiatry Neurosci 2006
4. Jonas Psychosomatic Medicine 2000

PSD: Pathophysiology

- Consistent prevalence figure of approximately 30% for PSD
 - Biological basis for PSD?
 - Biogenic amine theory:
 - injury to biogenic amine axons decreases 5HT and NE1
 - Lower levels of 5HIAA in CSF of PSD patients ²
 - Cytokine Hypothesis³:
 - Increased production pro-inflammatory cytokines in stroke (IL-1 β , TNF- α and IL-18) \rightarrow amplification inflammatory pathway \rightarrow activation IDO enzyme \rightarrow decrease in 5HT \rightarrow PSD
 - Lesion location and relation to PSD:
 - No support for left sided lesions found in a systematic review
1. Robinson Biological Psychiatry 1977
 2. Bryer J Neuropsychiatry and Clinical Neurosciences 1992
 3. Spalletta Molecular Psychiatry 2006
 4. Carson The Lancet 2000

Post stroke emotional incontinence (EI)

- Emotional incontinence :
 - pathological crying
 - pathological laughing
 - Usually unrelated to or disproportionate to subjective mood
- Treatment of emotional incontinence
 - SSRIs have been investigated
 - Small RCT with Citalopram showed 50% reduction in pathological crying¹
 - Peak effect within 24 hours in majority of patients
 - RCT with Nortryptaline 50-100mg showed significant improvement of EI as reflected by the validated Pathological Laughing and Crying Scale ²

1. Andersen The Lancet 1993

2. Robinson Am J Psychiatry 1993

PSD: Assessment

- All patients with stroke have to be screened for depression
- Patient interview and mental status examination including collateral from family and allied health staff involved in patient's care
- Use of standardized tools:
 - PHQ-9, based on DSM-IV, used in primary care for screening for MDD
 - Validated in screening for PSD¹
 - Performs equally well regardless of age, gender, ethnicity

1. Williams Stroke 2005

PSD: Assessment

	Not at all	Several days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself — or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8. 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	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

FOR OFFICE CODING 0 + _____ + _____ + _____
 =Total Score: _____

Total Score
Depression Severity
 0-4 None
 5-9 Mild depression
 10-14 Moderate depression
 15-19 Moderately severe depression
 20-27 Severe depression

PHQ-9 Questionnaire and scoring

Treatment

- Psychological Therapy
- Pharmacological Therapy

Canadian Best Practice Guidelines for Stroke Care: Psychological Management

- Patients should be given information and advice about the impact of stroke, and the opportunity to talk about the impact on their lives [Evidence Level B].
- Patients with marked anxiety should be offered psychological therapy [Evidence Level B].
- Patients and their caregivers should have their psychosocial and support needs reviewed on a regular basis as part of long-term stroke management [Evidence Level A].

Psychotherapy for PSD

- Cognitive behavior therapy (10 – 1 hour weekly sessions) was not effective in reducing depressive symptoms within 1 month of having stroke¹

Psychotherapy to Prevent PSD

- Problem-solving therapy administered over 12 months (12 sessions)
- PST adapted for use in stroke population, psychotherapy well adapted to use in populations with executive dysfunction
- PST more effective in preventing development of depression when compared to placebo:
 - HR = 2.2 (95% CI: 1.4 – 3.5, P<0.01)

Canadian Best Practice Guidelines for Stroke Care: Antidepressants

- Patients diagnosed with a depressive disorder should be given a trial of antidepressant medication, if no contraindication exists. No recommendation is made for the use of one class of antidepressants over another; however, side effect profiles suggest that selective serotonin reuptake inhibitors may be favoured in this patient population [Evidence Level A].
- In adult patients with severe, persistent or troublesome tearfulness, selective serotonin reuptake inhibitors are recommended [Evidence Level A].
- Treatment should be monitored and should continue for a minimum of six months if a good response is achieved [Evidence Level A].
- Routine use of prophylactic antidepressants is not recommended in post-stroke patients [Evidence Level A].

Pharmacological Therapies

- Meta-analysis of antidepressants for post-stroke depression (10 studies)
 - 8 SSRIs, 2 TCA, 1 trazodone
 - Recovery or remission of depression: OR: 2.58 (1.56 – 4.26, p=0.002)
 - Continuous outcomes: SMD -1.02 (-1.80 - -0.23, p 0.01)

Serotonergic or Noradrenergic Antidepressants

- RCT comparing SSRI citalopram to noradrenergic antidepressant reboxetine for PSD within 12 months of stroke
- Compared symptom response for individuals with “anxious” vs. “retarded” depression
 - Citalopram more effective for “anxious” depression
 - Anxiety, tremor, irritability, restlessness
 - Reboxetine more effective for “retarded” depression
 - Anergia, slowness, drowsiness
- Both TCAs and SSRIs effective for PSD

Other Pharmacotherapies

- Limited evidence for methylphenidate and other psychostimulants¹

Antidepressants and Risk of Intracerebral Hemorrhage

- Antidepressants increase the risk of bleeding related adverse events:
 - Upper GI bleeds, perioperative bleeding
 - Mediated through anti-platelet aggregation effects of serotonergic antidepressants
- Risk of intracerebral hemorrhage with SSRIs¹:
 - RR: 1.42 (95% CI: 1.23 – 1.65)
 - RR: 1.5 for antidepressants combined with oral anticoagulants (above anticoagulants alone)
 - Absolute risk: 1 / 10,000 treated for 1 year

Antidepressants for Stroke Recovery

- RCT of fluoxetine (20 mg daily) vs. placebo for adults with acute ischemic stroke (5-10 days post stroke) treated for 3 months, all patients received physiotherapy¹
 - Excluded patients with depression
 - Fluoxetine group had significant improvement in motor recovery on Fugl-Meyer Motor Score (9.4 point difference, $p=0.003$), effect only observed at 90 days
- RCT of problem solving therapy vs. escitalopram in prevention of depression demonstrated cognitive benefit on Repeatable Battery for Assessment of Neuropsychological Status (RBANS)²

1. Chollet, Lancet Neurol, 2011
2. Jorge, Arch Gen Psychiatry, 2010

Resources

- Geriatric Psychiatry Outreach Programs
 - www.pccchealth.org
 - Clinical Services → Geriatric Psychiatry → Outpatient and Outreach
- Providence Care – Mood Disorders
- Canadian Coalition for Seniors Mental Health
 - www.ccsmh.ca
 - Tools for Healthcare Providers → Depression
 - Guidelines, pocket card and family guide for depression

Conclusions

- Depression is common following stroke and associated with significant disability
- There is limited evidence for psychotherapy in PSD at the present time
- Antidepressants are effective for PSD and anxiety symptoms, may also provide cognitive and functional benefit for individuals without depression

Thank you

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References

- Ayerbe, L., Ayis, S., Wolfe, C. D., & Rudd, A. G. (2013). Natural history, predictors and outcomes of depression after stroke: systematic review and meta-analysis. *The British Journal of Psychiatry*, 202(1), 14-21.
- Chollet et al. Fluoxetine for motor recovery after acute ischemic stroke (FLAME): a randomised placebo-controlled trial. *Lancet Neurology* 2011;10:123-130
- Mead GE et al. Selective serotonin reuptake inhibitors (SSRIs) for stroke recovery. *Cochrane Database Syst Rev* 2012, 11:CD009286
- Morrison, V., Pollard, B., Johnston, M., & MacWalter, R. (2005). Anxiety and depression 3 years following stroke: demographic, clinical, and psychological predictors. *Journal of psychosomatic research*, 59(4), 209-213
- Nannetti, L., Paci, M., Pasquini, J., Lombardi, B., & Taiti, P. G. (2005). Motor and functional recovery in patients with post-stroke depression. *Disability & Rehabilitation*, 27(4), 170-175.