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

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

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 3.4 times higher 10 year mortality compared to non-depressed stroke patients[1]
  - Lesser functional recovery in patients with PSD[1]
  - Higher recovery of ADLs with patients who respond to treatment for PSD[3]
  - Reduced quality of life[4]

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 stroke[1]
  - In population studies 22%
  - In hospital studies 30%
  - In rehabilitation studies 30%

1 Ayerbe BJPsych 2013

PSD: Under diagnosed

- PSD is under diagnosed :
  - prospective observational study of 13 centers in Ontario from Registry of the Canadian Stroke Network 4.8% diagnosed with depression while 6.7% treated with new antidepressant[1]
- However, stroke units identify and treat PSD more often as compared to other units[1]:
  - 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 stroke[3]
- Cognitive impairment[1]
- Anxiety[2]
- Social Isolation[1]
- Conversely, depression itself is a risk factor for the occurrence of stroke with a perspective 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 Hypothesis[3]:
  - Increased production pro-inflammatory cytokines in stroke (IL-1β, TNF-α and IL-18)→ amplification inflammatory pathway → activation IDO enzyme → decrease in 5HT→ 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 crying[1]
  - 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 PSD[1]
  - 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: _____

PHQ-9 Questionnaire and scoring

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

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 stroke[1]

1. Lincoln, Stroke, 2002

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)

1. Robinson, JAMA, 2008

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)

1. Price, J Neurol Neurosurg Psychiatry, 2011

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

1. Rampello, Psychopharmacology, 2004

Other Pharmacotherapies

- Limited evidence for methylphenidate and other psychostimulants[1]

1. Cole, J Geriatr Psychiatry Neurol, 2001

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 hemmorrhage with SSRIs[1]:
  - 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

1. Hackam, Neurology, 2012

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 physiotherapy[1]
  - 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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