POST-STROKE DEPRESSION

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I have no financial relationships to disclose.
Outline

- Define Poststroke Depression
- Clinical Presentation
- Epidemiology
- Sequelae
- Treatment
Poststroke Depression (PSD)
Depression

- First Note…

- Depression is now considered a risk factor for stroke.
# Neuropsychiatric Manifestations of Stroke

<table>
<thead>
<tr>
<th>Manifestation</th>
<th>Frequency of Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressed Mood</td>
<td>61%</td>
</tr>
<tr>
<td>Irritability</td>
<td>33%</td>
</tr>
<tr>
<td>Appetite changes</td>
<td>33%</td>
</tr>
<tr>
<td>Agitation</td>
<td>28%</td>
</tr>
<tr>
<td>Apathy</td>
<td>27%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>23%</td>
</tr>
<tr>
<td>Sleep disturbances</td>
<td>16%</td>
</tr>
<tr>
<td>Aberrant behavior, disinhibition</td>
<td>10%</td>
</tr>
<tr>
<td>Delusions</td>
<td>2%</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>1%</td>
</tr>
</tbody>
</table>

DSM-V Depression Diagnosis

5 of following for 2 weeks +
(1) depressed mood or (2) loss of interest or pleasure.

- depressed mood most of the day
- markedly diminished interest or pleasure in activities
- significant weight loss when not dieting or weight gain
- insomnia or hypersomnia
- psychomotor agitation or retardation
- fatigue or loss of energy
- feelings of worthlessness or excessive or inappropriate guilt
- diminished ability to think or concentrate, or indecisiveness
- recurrent thoughts of death, recurrent suicidal ideation
Depression: Young vs. Elderly

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Younger patients</th>
<th>Elderly patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressed mood</td>
<td>+++</td>
<td>+(+</td>
</tr>
<tr>
<td>Cognitive impairment</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Retardation</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Somatic symptoms</td>
<td>+</td>
<td>+++</td>
</tr>
<tr>
<td>Anxiety</td>
<td>+(+</td>
<td>+++</td>
</tr>
<tr>
<td>Psychotic symptoms</td>
<td>(+)</td>
<td>+</td>
</tr>
<tr>
<td>Hypochondria</td>
<td>+</td>
<td>++</td>
</tr>
</tbody>
</table>

Poststroke Depression (PSD) Defined

- Depression which occurs after stroke and can not be ascribed to any other mental illness

- Also termed **Vascular Depression** = depression associated with cerebrovascular disease.

- Vascular Depression is thought to result from disruption of prefrontal systems and lesions damaging the striato-pallido-thalamo-cortical pathways.
PSD Core Features

- Persistent sadness
- Hopelessness, helplessness, worthlessness
- Feelings of being a burden on family
- Amotivation
- Loss of interest
- Passive and/or active suicidal ideation
PSD Subtypes

- **Early**-within 3 months of the stroke
  - Somatic signs of depression
  - Earlier onset of melancholy
  - Social withdrawal
  - Amotivation

- **Late**-anytime after 3 months of the stroke
Increased risk for PSD:

- Age
- Female gender
- Single living
- Unable to return work
- Social activities
- Change in ability to communicate
- Stroke severity
- Prior history of depression
When does PSD occur?

- First 2 years is the greatest risk
- Highest in the first 3-6 months
Does Lesion location predict PSD?

• Multiple studies suggest:
  – Left frontal lobe
  – Basal ganglia
  – Left hemisphere >> Right hemisphere

• Multiple reviews do not demonstrate an association between lesion site and development of PSD.
What makes diagnosis difficult?

- Signs of depression overlap with stroke
- Depression complaints are more vague
- Lack of properly trained personnel
- Lack of assessment tools for diagnosis
Differential Diagnosis

• Hypoactive Delirium
• Adjustment Disorder, depressed
• Abulia (particularly with frontal strokes)
• Dementia
• Pseudobulbar affect
Epidemiology of PSD

• 30-50% will meet criteria for depression within the first year

• Depression rates are the same in:
  – Acute hospitalization setting
  – Rehabilitation Center
  – Outpatient Clinic

• Rates are relatively consistent across cultures
Sequela
PSD is associated with:

• Poorer functional outcomes

• Consistently higher mortality rates

• One of the strongest factors impairing recovery of ADLs
PSD is associated with:

- Burden for patients and caregivers
- Attention deficits, cognitive impairment, and impaired learning
- Executive and motor dysfunction
- Disability
- Poor response to rehabilitation
- Slower physical recovery
- Quality of life and mortality
Treatment
Treatment

- SSRIs are first line treatment
- Stimulants may be considered
- Less data to support SNRIs

- Cognitive Behavioral Therapy (CBT)
- Electroconvulsive Therapy (ECT) for treatment refractory PSD
- Medication treatment should be continued for up to 2 years
Selective Serotonin Reuptake Inhibitors

- First-line agent in PSD treatment
- No strong data recommending one SSRI over another
- Commonly studied SSRIs include escitalopram, sertraline and fluoxetine
- Poststroke SSRI use is linked with increased survival
Selective Serotonin Reuptake Inhibitors

• FLAME study: Patients s/p ischemic stroke with a significant motor deficit were given an early prescription of fluoxetine or placebo with physiotherapy

• Patients given fluoxetine had lower rates of depression and better motor function as compared to the placebo group at 3 months.

• The SSRIs such as fluoxetine are thought to modulate brain plasticity and thereby improves motor recovery.
Tricyclic Antidepressants

Nortriptyline

• The first choice among TCAs
• Its use may be limited because of side effects
• The best studied drug among TCAs

• **Average Dose:** 20 mg

• **Side effects**
  • Anticholinergic effects: glaucoma, confusion, urinary retention, and blurring of vision
  • Antiadrenergic activity: hypotension and dizziness
Stimulants in PSD

• Some studies supporting use of methyphenidate for PSD

• These have shown:
  • Rapid mood elevation as compared to antidepressants
  • Improved motor functioning
  • Improved ADLS without many side effects

• Stimulants should be considered in:
  • Depression with significant amotivation
  • Poor participation in therapy
  • In need of a rapid response
Medication Algorithm

CBT in PSD

• CBT has been shown to be efficacious
• Particularly useful when medications are not tolerated

• Drawbacks include:
  – Higher costs
  – Increased staff time and higher expertise
  – Slower response requiring several weeks before response
ECT in PSD

- Used in severe depression, treatment refractory depression, and life threatening depression
- Not recommended as first line treatment
- Very rapid onset of response
- One study found a 95% improvement rate in PSD

- Drawbacks include:
  - Cardiac complications
  - Memory loss
  - Delirium
Transcranial magnetic stimulation (rTMS)
In Summary

**Diagnosis**
- DSM-III and DSM-IV
- ICD-10
- Psychiatric scales

**Impact on clinical evolution**
- Poor functional recovery
- Poor quality of life
- Cognitive deterioration

**Predisposing factors**
- Age
- Infarct site
- Female gender
- Decrease in social activities
- Living single
- Severity of stroke
- Functional dependence
- Language alteration
- HDRS

**Treatment and prevention**
- Tricyclic antidepressants
- Selective serotonin reuptake inhibitors
- Psychostimulants
- Psychotherapy
In Summary

Early diagnosis of depression and rapid initiation of aggressive treatment may reduce stroke recurrence, aid in recovery, and decreasing mortality.
Questions

PSYCHIATRIC HELP 5$

THE DOCTOR IS IN