DIAGNOSIS AND TREATMENT: PSYCHIATRIC PERSPECTIVE

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STANFORD PANS PROGRAM
SIGNS: PANS

• Sudden onset
• Multiple symptom domains
• Severe symptoms
• Relapsing-remitting course

IT MIGHT BE PANS
Inflammation

Infections
- Group A Strep
- Mycoplasma
- Other

PANS
(Pediatric Acute-onset Neuropsychiatric Syndromes)

Immune Dysregulation

- Adaptive Immune System
- Immune Deficiency
- Innate Immune System
- Other

Disruption of Blood Brain Barrier

Antibodies +/- Cytokines +/- other immune mediators

?Altered neuronal signaling

?Altered microglial activation

Jennifer Frankovich MD MPH
PANS TREATMENT

Psychotropics

Infection, Inflammation, Predisposition

Safety
Case management
Psychoeducation
Support
CBT, DBT, HRT…

Antibiotics
Immune Modulation
Specialty Consultation

School accommodations
Rehab
OT
PT

Fall out
THE PSYCHIATRIST’S ROLE

• FUNCTION:
  • Educate families
  • Ensure safety
  • Facilitate child receiving medical treatments
  • Inform treatment team re sx
  • Address symptoms
  • Help coordinate care
PSYCHIATRIC AND BEHAVIORAL INTERVENTIONS

• Require individualization
• Many variables change at once
• Psychotropic medication responses are atypical
• Require adjustment over illness course
• Require multidisciplinary approach
• Derive from evidence-based treatments
STANFORD PANS PROGRAM
FINDINGS AND WORKS IN PROGRESS

• Immunology
  • HLA
  • Monocytes
  • GAS toxin causing TH17 skew
  • Vasculitis markers

• Treatment Responses
  • NSAIDs
  • IVIG
  • Corticosteroids
  • Rituximab/Mycophenylate/Methotrexate
  • Immune deficiencies
  • Sinus infections

• Symptoms
  • Hallucinations
  • Pain, fatigue, exercise intolerance
  • Caregiver Burden
  • Caregiver Skills Group
  • Cognitive changes
CAREGIVER BURDEN LIKE ALZHEIMERS’ FAMILIES

![Graph showing caregiver burden inventory over years followed by the FANS clinic]

- Mean CBI in Alzheimer’s study 1
- Mean CBI in Alzheimer’s study 2
- Mean CBI in Alzheimer’s study 3

Flare status: Disease remission, Disease flare
HLA-B frequencies in caucasian controls and caucasian PANS cases

<table>
<thead>
<tr>
<th>Allele frequency</th>
<th>HLA-B type</th>
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<tr>
<td>0.00</td>
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<td>48, 81</td>
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<td>42, 73</td>
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</table>

Caucasian_donors (N = 776)
Caucasian_PANS (N = 74)
Effect of early and prophylactic NSAIDs on flare duration

<table>
<thead>
<tr>
<th>Flare Length (week)</th>
<th>Description</th>
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<tbody>
<tr>
<td>12.5 weeks</td>
<td>Flare not treated with NSAIDs</td>
</tr>
<tr>
<td>8.5 weeks</td>
<td>Flare while patient already on NSAIDs</td>
</tr>
<tr>
<td>10 weeks</td>
<td>Flare treated within 30 days of flare start</td>
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</tbody>
</table>
EFFECT OF CORTICOSTEROIDS ON WEEKS IN FLARE

Single episode of PANS or relapsing/remitting PANS

Duration of the initial presentation (i.e., first PANS flare) of PANS
SYMPTOM PREVALENCE FINDINGS

PAIN, FATIGUE OR EXERCISE INTOLERANCE: 81%

SENSORY DISTRUBANCE/ HALLUCINATIONS 37%

HALLUCINATIONS
n = 153

- None
- Visual
- Auditory
- Other

0 23 45 68 90