Dr. Kovacevic has recently served on PANDAS Advisory Board, Octapharma, NJ
Clinical Evaluation of Youth with Pediatric Acute Onset Neuropsychiatric Syndrome (PANS): Recommendations from the 2013 PANS Consensus Conference

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Clinical Presentation of Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections in Research and Community Settings

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Behavioral symptoms

- **OBSESSIVE-COMPULSIVE SYMPTOMS** *(at least ONE OCD symptom was present in ALL patients)*
  
  1. **Obsessions:**
     - Intrusive and/or inappropriate thoughts (violent thoughts and thoughts of sexual nature may predominate!) causing marked anxiety.
     - “Running thoughts” or certain thoughts getting “stuck”
     - General anxiety (not related to any real-life problems).
     - Phobias, unfounded fears.
  
  2. **Compulsions:**
     - Repetitive physical and mental behaviors.
     - Behaviors or acts aimed at preventing or reducing possibility of some dreaded event.

- **GENERAL ANXIETY** *(identified in almost ALL patients)*

- **SEPARATION ANXIETY** *(identified in almost ALL patients)*
Behavioral symptoms (cont.)

- **BEHAVIORAL REGRESSION** *(in some form present in almost *ALL* patients)*
  - I. “Baby talk”
  - II. Other behaviors unbecoming of chronological age.*

- **SLEEP DISORDER** *(identified in *84%* of all patients)*
  - I. Long bed time rituals.
  - II. Insomnia.
  - III. Night terrors.
  - IV. Frequent waking up at night and wandering around the house or visiting parents bedroom.
  - V. Refusal to sleep alone**

- **HYPERACTIVITY AND INATTENTIVENESS** *(identified in *71%* of all patients)*

- **AGGRESIVENESS** *(identified in *62%* of all patients)*
Somatic Symptoms

- GENERAL HYPOTONIA (*Latimer: identified in MAJORITY of patients*)
- DETERIORATION IN FINE MOTOR SKILLS AND HANDWRITING (dysgraphia) (*identified in 89% of all patients*)
- URINARY FREQUENCY, ENURESIS, DAY TIME ACCIDENTS (*identified in 88% of all patients*)
- INABILITY TO CONCENTRATE (*identified in 87% of all patients*)
- *TICS and/or ADVENTITIOUS MOVEMENTS* (*identified in 79% of all patients*)
- Persistent, non-specific ABDOMINAL COMPLAINTS (*identified in 79% of all patients*)
- SHORT-TERM MEMORY impairment (*identified in 62% of all patients*)
Somatic Symptoms (cont.)

• DETERIORATION IN LEARNING ABILITIES, particularly in mathematics *(identified in 62% of all patients)*
• EMOTIONAL LABILITY/DEPRESSION *(identified in 61% of all patients)*
• INCREASED SENSORY RESPONSES (increased sensitivity to light and/or sounds and/or smell and/or touch) *(identified in 39% of all patients)*
• EATING DISORDER (ANOREXIA) *(identified in 17% of all patients)*
• HALLUCINATIONS *(identified in 9% of all patients)*
• SELECTIVE MUTISM *(identified in 7% of all patients)*
• INTERMITTENT DYSTONIA *(identified in 3% of all patients)*
ABSOLUTE CRITERIA

present in 96.5 % of patients

- **Sudden onset**
  
  Sudden and precipitous development of symptoms out of full health over period of hours (rarely 1 – 2 days).
  
  It is common that parents can recall the EXACT day or even the EXACT hour of symptoms’ onset.
  
  Characteristic dynamic evolution of symptoms (both, in nature and intensity) over period of 2 – 6 weeks.
MAJOR CRITERIA

• Presence of OCD symptoms (at least ONE OCD symptom was identified in ALL patients).

• Separation anxiety (subtype 1 and subtype 2) (identified in virtually ALL patients).

• Anorexia (subtype 1) (identified in 17% of all patients)*.

*Patients group: acute onset of food (and in some cases liquid) refusal with DOCUMENTED weight loss exceeding 5% of patient’s bodyweight.
Subtypes of Separation Anxiety

**Separation anxiety subtype 1**
Continuous daytime AND night time PHYSICAL dependency on parents’ (especially mother’s) physical presence.
**Usually seen in patients 10 years and younger.**

**Separation anxiety subtype 2**
Psychological dependency on familiar PHYSICAL environment (usually home or particular room in the house) with or without parents present.
**Seen in patients OLDER than 10 years of age.**
Subtypes of Anorexia

Anorexia subtype 1
Fear of choking on food.
Fear of vomiting upon ingestion of food.
Inability to swallow because of intolerable smell or texture of food.

Characteristic of patients 10 years and younger.

Anorexia subtype 2
Distorted body image.

Present in patients >12 years of age and/or can evolve from other subtypes following certain (usually prolonged) period of time.
MINOR CRITERIA GROUP #1

- **Sleep disorders** (insomnia, night terrors, refusal to sleep alone)
- **Behavioral regression** (“baby talk”, temper tantrums, behaviors unbecoming of actual chronological age)
- **Emotional Lability/Depression**
- **Hyperactivity, inattentiveness, inability to concentrate** (ADD/ADHD dg. compatible)
- **Aggressiveness** toward the others, **self-injurious** behavior.
- **Learning disability** (particularly mathematics) that was NOT present before the onset of symptoms.
- **Hallucinations**
MINOR CRITERIA GROUP #2

- “Hyper-alert” appearance and/or “puppet-like” facial mannerism
- Hypotonia (general)
- Mydriasis (particularly during the acute phase of symptoms)
- Urinary frequency, and/or enuresis and/or daytime urinary incontinence
- Short-memory loss (failure)
- Increased sensory responses (smell, sounds, light, touch)
- Fine motor skills deterioration
- Dysgraphia
- Tics and/or adventitious movements
DIAGNOSTIC FORMULA

FORMULA #1
(in patients with SUDDEN ONSET OF SYMPTOMS)

ABSOLUTE CRITERIA + TWO Major Criteria

FORMULA #2
(No SUDDEN ONSET OF SYMPTOMS elicited)

TWO Major Criteria + THREE Minor Criteria
(at least ONE symptom from each subgroup must be present)
SUPPORTING EVIDENCES

- Positive GAS titers
- Positive EBV IgM
- Positive ANA titer (speckled)
- Elevated IgE levels
- Leukopenia
- Increased Circulating Immune Complexes (C₁q, C₃d, Raji cells)
- Sleep studies abnormalities
- MRI abnormalities (?)
- EEG abnormalities
- PET scan abnormalities

- Positive response to antibiotic
- Positive response to steroid “burst”
...few final thoughts

- Controversies have plague PANDAS diagnosis ever since its initial report and are still here.
- It has been always about who is RIGHT and who may be WRONG, frequently resorting to personal attacks...
- ...but in all these intellectual exercises (in futility) actual patients, kids, have been forgotten.

SHOULD WE AND CAN WE CHANGE THAT?