Update on Tics and Gilles de la Tourette Syndrome

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Tics
  - Tics are sudden, repetitive, stereotyped movements or vocalizations, involving specific muscle groups
    - Simple
    - Complex

DSM V Criteria for Gilles de la Tourette Syndrome
  - Two or more motor tics and at least one vocal tic (do not need to occur at the same time
  - Have had tics for at least a year
  - Begin before 18 years of age.
  - Not due to medication, drugs or another medical condition

Stigma
  - (Malli et, Eur Child and Adolesc Psychiatry)
    - Youth who do not have TS show an unfavourable attitude towards individuals with TS in comparison to typically developing peers.
    - Young people with TS describe devaluation from others as a response to their disorder.
    - Self-degrading comments noted in a number of studies where children point out stereotypical views that they had adopted about themselves.
    - Parents expressed guilt in relation to their children’s condition and social alienation as a result of the disorder.

Co-morbidities
  - Attention deficit hyperactivity disorder
  - Obsessive-compulsive disorder
  - Anxiety
  - Learning disability
  - Pervasive developmental disorders
  - ODD/Conduct disorder/Episodic Rage
  - Sleep problems
• (Hirschtritt et al, JAMA Psychiatry, 2015)
• Most comprehensive study to date of TS and its co-morbidities
• Compared patients with TS (n = 1374) to TS-unaffected family members (n = 1142)
• The lifetime prevalence of any psychiatric comorbidity among individuals with TS was 85.7%
• 57.7% of the population had 2 or more psychiatric disorders
• The mean (SD) number of lifetime comorbid diagnoses was 2.1
• 72.1% of the individuals met the criteria for OCD or ADHD
• Other disorders, including mood, anxiety, and disruptive behavior, each occurred in approximately 30% of the participants.
• The age of greatest risk for the onset of most comorbid psychiatric disorders was between 4 and 10 years
• Impact of co-morbidities may be more significant than tics
• Treating co-morbidities can reduce anxiety/stress thus reducing tic severity
• “Good vs. Bad” outcome in quality of life studies related to co-morbidities, not tic severity

**Approach to Treating tics**

1. Education
   - Correct explanation of disorder
   - Natural History
   - Dispel myths
2. Treat most impairing co-morbidity
3. Consider medication for tics

**Summary of Evidence for Treatment for Tics**
(Pringsheim et al, Can J Psych, 2012)

**Strong Recommendations**
• Habit Reversal Therapy
  High quality evidence
• Exposure and Response Prevention
  Low quality evidence
• Clonidine
  Moderate quality evidence
• Guanfacine
  Moderate quality evidence
Weak Recommendations: Antipsychotics

- High Quality
  Pimozide
  Haloperidol
  Risperidone
- Low Quality
  Fluphenazine
  Metoclopramide
  Aripiprazole
  Olanzapine
  Ziprasidone;
- Very Low Quality
  Quetiapine

Weak Recommendations

- Low Quality
  Topiramate
  Baclofen
  Botulinum toxin
  Cannabinoids
  Not recommended in children
- Very Low Quality
  Tetrabenazine

Other treatments

- Behavioural treatment
  May be as effective as medication
  Does not take tics away completely
  Teaches children to convert a bothersome tic into a less bothersome one
  Need to be ≥ 9 years and be motivated to do therapy
- Deep Brain Stimulation
  Insufficient evidence for formal recommendation
  Experimental
  Not recommended for children
- Transcranial Magnetic Stimulation
  Existing research studies suggest no benefit

PANDAS (Pediatric Autoimmune Neuropsychiatric Disorder Associated with Streptococcal Infection)

- PANDAS Criteria
  Tic disorder and/or OCD (fulfilling DSM IV-TR criteria)
  Ages 3-12 years
  Abrupt onset of symptoms and/or episodic course
  Temporal association between symptom exacerbation and streptococcal infections
  Neurologic abnormalities on examination
  Choreiform movements
Tics and Hyperactivity

In the original article on PANDAS, noted that diagnosis cannot be made without at least one or two clear exacerbations associated with GAS infection.

- Titres might be preferable to throat swab.
- Single titre insufficient, as need to document falling titres as symptoms improve.
- But state that not all exacerbations need to be linked to GAS infection.

PANS (Pediatric Acute Onset Neuropsychiatric Syndrome)

- 3 diagnostic criteria:
  - Abrupt, dramatic onset of OCD or anorexia.
  - At least two additional neuropsychiatric symptoms with similarly severe and acute onset.
  - anxiety;
  - mood swings and depression
  - aggression
  - irritability and oppositional behaviors
  - developmental regression, sudden deterioration in school performance or learning abilities
  - sensory and motor abnormalities
  - somatic signs and symptoms.
  - Symptoms are unexplainable by a known neurologic or medical disorder. (Swedo et al, Pediatr Therapeut 2012)

Cunningham Panel (Moleculera Labs)

- (Singer et al, PLOS One, 2015)
- found that there are likely two groups of PANDAS type patients
  - those with “choreiform movements” have antibody profile similar to Syndeham’s chorea vs those with no choreiform movements