General Principles of Treating TS

Counsel hope and forebearance

- Most individuals will have a better adulthood than childhood
- 80-90% will improve substantially

General Principles of Treating TS

Remember educational issues

- Don't forget to look for ADHD, learning disabilities and how tics interfere with learning
- Assist with educational placement, educating teachers and designing educational interventions

General Principles of Evaluation/Treating TS

Assess and treat symptoms that interfere with the individual's optimum development and growth Tic treatment? Must weigh personal embarrassment and severity of tics with possible side effects/risks of pharmacological intervention

- **May decide not to treat tics with any medication**
- **Or may decide to treat tics or OCD or ADHD or impulsivity or enuresis or insomnia or anxiety or SIB**

General Principles of Medication Treatment

- **Psychotropics must be used in the context of good diagnostic evaluations, careful informed consent, continued monitoring and re-evaluation and implementation of other psychosocial therapies.**
- **Each trial of medication with any child is an experiment.**

Medication for tics

- Start with low doses and go slow
- Remember that part of the definition of TS is variable ticing over time, therefore it is very hard to gauge efficacy against fluctuating symptoms
- Use a pre-treatment side effect form and scales: CY-BOCs, Conners, SIB, TS scales
- Use of videotaping of tics- Rush Video Rating Scale
- Be patient, do a thorough treatment trial

Specific Psychopharmacology for TS

Tics	ADHD/Impulsivity	OCD and Anxiety
clonidine/guanfacine	psychostimulants	SSRIs
risperidone and other atypicals	clonidine/guanfacine	CMI
clonazepam	atomoxetine	clonazepam
pimozide (EKG)	venlafaxine	venlafaxine
haloperidol	TCAs	
pergolide		
desipramine		
nortriptyline		

- bupropion, imipramine, chlorpromazine, thioridazine, antihistamines may worsen tics
- clozapine was found to be ineffective in TS
- SSRIs may have indirect effect in reducing inner tensions but ? effects on tics directly

Psychostimulants in Kids with TS ?

It used to be a “no-no”to use psychostimulants in kids with tics or even if they had first degree family members with tic

Product Information on MPH states it is contraindicated in TS but not so DAS

A new study

- N=91, Placebo and MPH in children with ADHD with and w/o tics: of those with no tics, 20% on MPH developed tics and 17% of those on placebo developed tics. Of those with tics, deterioration in 33% of those with tics on MPH and 33% of those on placebo (Law and Schachar 1999)

More New Studies

- in TS/ADHD DBPC study, n=20, Rxed with MPD and DAS , 3 withdrew---emerge at higher dosing, if sustained MPH, tics got better (Castellanos et al 1997)
- 4 arm study of kids with chronic tics and ADHD-----MPH, CND, CND+MPH and placebo

-Tics- all arms, n=30, tho the overall severity of tics decreased in all active arms, 20% of kids had a worsening of tics

-ADHD: CND best for impulsivity /HA and MPH best for inattention with best outcome CND +MPH (TS Study Group, 2002)

- **Summary: small percent of kids with CMT or TS treated with MPH have tics worsen: CND treats some symptoms of ADHD**

Improvement in tics in kids with CMT and/or TS

Using Yale Global Tourette Severity Scale

- Desipramine 30% (Spencer et al 2002)
- Guanfacine 31% (Scahill et al 2001)
- Clonidine 26% (Gaffney et al 2002)
- Risperidone 21% (Gaffney et al 2002)
- Pergolide 28% (Gilbert et al 2003)

Using TS Global Scale

- Pimozide 40% (Sallee et al 1997)
- Haloperidol 27% (Sallee et al 1997)

(placebo response= 6-12% Sallee et al 2000, Gilbert et al 2003)

Clonidine

- presynaptic alpha 2 agonist and postsynaptic alpha 2A,B,C agonist, also imidazoline I-1 receptor effects (DIRTY DRUG)
- contraindications: SA/AV node, Raynauds, DM
- start at 0.025 mg or 0.05 mg once daily and gradually increase to 5-9 micrograms/kg/day
- short acting behaviorally, need tid or qid dosing
- major side effect is sedation and dry mouth. withdrawal hypertension
- 1993-99:10,000 "exposures";57% < 6 yrs- 1 death (Klein-Schwartz 2002) fewer, more serious with patch (Roberge 2000)

But 6 months later----

- **late onset on nightmares or terrors- withdraw gradually, add a sleeper for a short while or switch to patch**

Clonidine patch

- Advantage of smoother delivery and not worry about withdrawal hypertension
- TTS 1, 2 and 3 equals 0.1, 0.2 and 0.3 mg daily dose
- Wash area, dry and patch; 5 day with 2 day overlap with onset and offset of 1-2 days
- Watch for irritation beneath the square patch
- Can use nasal cortisone spray (Flonase, Nasonex, Rhinocort, Beconase, Nasacort, and Nasrel) beneath patch
- Can cover with Opsite

GUANFACINE

- "cleaner" than clonidine--- alpha 1A agonist
- 1-3 mg q day
- Consider TID
- Less sedation, rebound hypertension
- Only 1 DBPC study---kids with ADHD+tic disorder, 1.5-3 mg/day shows improvement in 37% CTRS-ADHD (Scahill et al 2001)

Risperidone

- 1 head-to-head with RSP-clonidine (Gaffney 2002) for children 7-14 with TS over 8 wks

Tics--improvement 21 % RSP and 26 % clonidine

ADHD- responders 29% RSP and 50% clonidine

OCD- responders 63% RSP and 33% clonidine

Risperidone-II

- Start at 0.5 mg- best at night
- Gradually increase every week or two while monitoring therapeutic response and side effects
- Usual range 0.5mg -3 mg

Haloperidol

- aim for lower plasma concentration than for psychosis (1-3 μg/ml blood level)
- remember that children have lower therapeutic levels and develop side effects at lower levels
- start at 0.5 mg per day and titrate to 1-3 mg/day
- 80% show some improvement
- remember neuroleptics can cause tardive dyskinesia and the side effects make patients with even good results want to get off the medication: about 1/4 won't take haloperidol over time

Pimozide

- start at 0.5 mg and highest dose 1-3 mg/day
- once a day dosing
- EPS
- same seizure threshold lowering effects as other high potency neuroleptics
- lower sedation effect
- cardiovascular: periodic EKGs related to calcium channel antagonism
- better tolerated than haloperidol over time (Sallee et al)

TS v. TD

- At risk for EPS and additional side effects
- Tardive dyskinesia, but it is tough to distinguish TS v TD

2 tactics:

- Since voluntary action decreases tics, get child to do finger touching to dd which increases TD movements
- Ask about sensory tics

Clonazepam

- Preliminary evidence that this medication is effective
- May be efective in 25-40%
- Often use just under 1 mg/day
- Caution needs to be exercised about the possibility of disinhibition

"Indeed, Tourette's, in its effects, is never confined to the person, but spreads out and involves others, and their reactions; and they in turn exert pressure – often disapproving, sometimes violent – on those with Tourette's. Tourette's cannot be studied or understood in isolation, as a 'syndrome' confined to the person of those affected; it invariably has social consequences, and comes to include and incorporate these, as part of itself. What one sees finally, therefore, is not just some sort of neurological omission (like chorea), but a complex negotiation between the affected individual and his world, a form of adaptation sometimes humorous and benign, at other times charged with conflict, pain, anxiety and rage."

— Oliver Sacks

Post Lecture Exam
Question 1

1. **In order to qualify for a diagnosis of Tourette Syndrome, which of the following statements is true?**

A. Coprolalia must be present.

B. Vocal tics should be present for less than 1 year.

C. Only children with chromic motor and phonic tics and one year history of OCD qualify.

D. The tics must be present before the age of 7.

E. Multiple motor tics and one or more vocal tics must be present for more than 1 year.

Question 2

2. If a boy is diagnosed with PANDAS, which of the following statements is true?

A. Place him immediately on prophylactic penicillin.

B. His symptoms typically develop slowly over time.

C. He should be treated with plasmapheresis.

D. Monitor future symptoms and if a throat culture is positive, treat with antibiotics.

E. He will likely develop Sydenham's chorea.

Question 3

3. A 7-year-old boy has mild vocal tics and mild motor tics. Which of the following statements is true?

A. His symptoms will likely remain about the same.

B. His symptoms will worsen as he approaches his late teens.

C. The phonic tics will tend to lessen over time.

D. His tics will likely peak in the next 2-3 years.

E. His motor tics will worsen as he approaches his teen years.

Question 4

4. **An 8-year-old girl meets criteria for mild TS and ADHD. She is failing in school because of the severity of her ADHD. Which of the following statements is true?**

A. The presence of tics contraindicates the use of psychostimulants.

B. Clinician should treat her tics first before treating her ADHD symptoms.

C. Dextroamphetamine sulfate is the psychostimulant that should be avoided.

D. Bupropion would help ADHD symptoms and would improve the tics.

E. Treating her ADHD symptoms with psychostimulants or atomoxetine.

Question 5

5. **Which of the following statements about the pharmacotherapy of TS is true?**

A. Haloperidol is the drug of choice.

B. Drugs shown to be effective may reduce symptoms about 10-40%.

C. ECG's must be done before treatment with pimozide, clonidine, and risperidone.

D. Drugs that improve tics will make ADHD symptoms worse.

E. All tricyclic antidepressants are contraindicated.

Question 6

6. An 8-year-old girl has chronic throat clearing, nose twitching, eye widening, abdominal tensing. She must enter each doorway and walk backwards through it again before entering any room. She "pulls" at her shirt collars and her socks must be "evened up 4 times" each morning. She meets criteria for which of the following?

A. Tourette Syndrome

B. Tourette Syndrome and Obsessive Compulsive Disorder

C. Tourette Syndrome and Atypical Psychosis

D. Chronic phonic tics and Obsessive Compulsive Disorder

E. Chronic motor tics and Obsessive Compulsive Disorder

Question 7

7. **A 12-year-old boy has had improvement in his chronic motor and phonic tics, but he has recently started to worry about "catching the AIDS virus" and he has been washing his hands many times each day. Which of the following statement is true?**

- If his symptoms of OCD worsen, his tics will also worsen.
- If his symptoms of OCD improve, his tics will also improve.
- If this symptoms of OCD impair his functioning, he should be treated either with CBT or an SRI.
- If his symptoms of OCD worsen, medications that might be tried will worsen his tics.
- His symptoms of OCD are likely to be insignificant.

Question 8

8. Parents of a child with TS are asking about the use of a clonidine patch. Which of the following statements is true?

A. The Catapress TTS patch only comes in one strength.

B. The Catapress TTS patch lasts for about 10-14 days.

C. Before using the Catapress TTS patch, oral dosing of clonidine helps establish the needed dosage.

D. The Catapress TTS patch cannot be used while in the shower.

E. If the Catapress TTS patch falls off, the child will have serious hypertension.

Answers to Pre & Post Competency Exams

1. E
2. D
3. D
4. E
5. B
6. A
7. C
8. C