Child & youth

Mental Health Series

Today's topic:

Management of Neurological Complications of Antipsychotics.

Speaker:

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CHEO

The Le Royal

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Declaration of conflict

Speaker has nothing to disclose with regard to commercial support.

Objectives

1. To develop an approach to the diagnosis and treatment of the neurological complications of antipsychotics
2. To review the evidence for the treatment of the neurological complications of antipsychotics.

Case 1

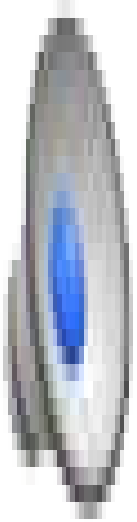
- You are seeing a 12 year old male who is being referred to you for ADHD and disruptive behaviour disorder
- In addition to Concerta, the patient is on risperidone 2 mg bid (started by the primary care practioner)
- In your office, you notice some abnormal movements

Case 2

- A 15 year old female is being seen in the ER for suicidal ideation
- When informed that she will need to be admitted to hospital, she becomes combative and agitated
- She is given 5 mg of olanzapine X 2
- She then develops sustained eye deviation upwards

Key questions to ask

- Do the movements represent an extrapyramidal reaction to the medication?
- Many other things can resemble these movements including: tics, hyperactivity, stereotypies, etc.
- Video



GUIDELINES

Treatment recommendations for extrapyramidal side effects associated with second-generation antipsychotic use in children and youth

Tamara Pringsheim MD MSc[1], Asif Doja MD MEd[2], Stacey Belanger MD PhD[3], Scott Patten MD PhD[4]; The Canadian Alliance for Monitoring Effectiveness and Safety of Antipsychotics in Children (CAMESA) guideline group

Assessment

- General observation:
  - Does the patient appear to be slow to move or speak (bradykinetic)?
  - Are there abnormal movements noted at rest? Does the patient seem restless with a constant need to move (akathisia)?
  - Does part or all of the patient's body assume an abnormal posture (dystonia)?
  - Is there excessive salivation (sialorrhea)?

Assessment

- Cranial nerves: Does the patient exhibit impairment in extra-ocular movements?
- Does the patient exhibit sustained gaze deviation (oculogyric crisis)?
- Is there dysarthria or dysphonia?
- Does the patient exhibit a decrease in facial expression?
- Are there abnormal movements of the face, mouth, lips, jaw or tongue?

Assessment

- Mental status:
  - Is the patient alert and oriented?
  - Is there impairment in the level of consciousness
  - Are attention, memory and executive functions intact?
- Motor examination:
  - Does the patient have an increased or a rigid tone?
  - Is cog-wheeling present?
  - Are abnormal movements present?
  - Is there a tremor?

Assessment

- Coordination and gait:
  - Are movements slowed?
  - Does the patient have trouble with rapid alternating movements?
  - Is the patient slow to stand from a seated position?
  - Does the patient have a shuffling gait?
  - Is there postural instability?

AIMS

Abnormal Involuntary Movements Scale

- Either before or after completing the examination procedure, observe the patient unobtrusively at rest (e.g., in the waiting room).
- The chair to be used in this examination should be a hard, firm one without arms. Have the person remove their shoes and socks.

AIMS

- Ask the patient whether there is anything in his or her mouth (such as gum or candy) and, if so, to remove it.
- Ask about the *current* condition of the patient's teeth. Ask if he or she wears dentures. Ask whether teeth or dentures bother the patient *now*.

AIMS

- Ask whether the patient notices any movements in his or her mouth, face, hands, or feet. If yes, ask the patient to describe them and to indicate to what extent they *currently* bother the patient or interfere with activities.
- Have the patient sit in chair with hands on knees, legs slightly apart, and feet flat on floor. (Look at the entire body for movements while the patient is in this position.)

AIMS

- Ask the patient to sit with hands hanging unsupported -- if male, between his legs, if female and wearing a dress, hanging over her knees. (Observe hands and other body areas).
- Ask the patient to open his or her mouth. (Observe the tongue at rest within the mouth.) Do this twice.
- Ask the patient to protrude his or her tongue. (Observe abnormalities of tongue movement.) Do this twice.

AIMS

- Ask the patient to tap his or her thumb with each finger as rapidly as possible for 10 to 15 seconds, first with right hand, then with left hand. (Observe facial and leg movements.)
- Flex and extend the patient's left and right arms, one at a time.
- Ask the patient to stand up. (Observe the patient in profile. Observe all body areas again, hips included.)

AIMS

- Ask the patient to extend both arms out in front, palms down. (Observe trunk, legs, and mouth.)
- Have the patient walk a few paces, turn, and walk back to the chair. (Observe hands and gait.) Do this twice.

Antipsychotic Induced Movement Disorders

- Acute dystonia reactions
- Acute akathisia
- Parkinsonism
- Tardive dyskinesia
- Withdrawl dyskinesia
- Tardive dystonia
- Tardive akathisia

(Pringsheim, Doja et al, Pediatr and Child Health,2011)

Neuroleptic induced acute dystonia

- Seen within days of starting or increasing dose of antipsychotic
- Dystonia= sustained muscle contractions causing twisting, repetitive movements and abnormal postures
- Cranial, neck and trunk muscles preferentially affected
- Retrocollis, extension of trunk, deviation of eyes, forced jaw opening and tongue protrusion

Treatment recommendations for acute dystonia

1. Administer diphenhydramine or an anticholinergic (benztropine, biperiden). Family can be advised to self administer an oral dose of diphenhydramine while seeking medical care. Symptoms will resolve within minutes with IV therapy. IV diazepam also helpful.
2. If on-going antipsychotic treatment is required, lower the dosage. Co-administration with an anticholinergic may be considered.

Neuroleptic Induced Acute Akathisia

- Akathisia= state of excessive restlessness with a need to move
- Complain of feelings of inner tension and restlessness
- Shaking or rocking legs and trunk, pacing, marching in place, rubbing face, moaning to relieve discomfort
- Young children may not be able to articulate symptoms of akathisia
- May describe vague sensations of internal restlessness, discomfort, or anxiety; parents may state child appears anxious, more irritable/agitated

Neuroleptic induced parkinsonism

- Dose dependent adverse effect
- Can be indistinguishable from idiopathic Parkinson's disease
- Classic resting tremor, rigidity, slowness of movement, shuffling gait, unilateral symptoms
- Fine, rhythmic perioral tremor may occur (rabbit syndrome)
- Can take months to resolve after withdrawl of offending agent

Treatment recommendations for acute akathisia or parkinsonism

1. Is the SGA being co-administered with a first generation antipsychotic? Higher risk of EPS in children on first generation or multiple antipsychotics. Considering discontinuing.
2. Is the lowest effective dosage of the SGA being used? Greater risk in children on high dose vs low dose risperidone. Consider lowering dosage.
3. Consider switching current SGA to quetiapine or clozapine.

Treatment recommendations for acute akathisia or parkinsonism

4. Is the child taking valproic acid, lithium or an SSRI? Valproic acid and lithium can cause tremor, and valproic acid can induce parkinsonism. SSRIs can induce akathisia. Consider tapering.
5. Consult neurologist.
6. If above measures ineffective, and antipsychotic therapy must be continued, consider adding an anticholinergic, propranolol, clonazepam, or mirtazapine for akathisia.

Anticholinergics or amantadine can be added for parkinsonism.

Neuroleptic Induced Tardive Dyskinesia

- Dyskinesia= abnormal movements
- Tardive dyskinesia refers to stereotypic, repetitive, abnormal movements of the mouth, lips and tongue, in a pattern that resembles chewing, sucking or lip pursing
- Involvement of distal limbs can occur
- Respiratory dyskinesias
- Patients often unaware of movements
- Macroglossia can develop

- VIDEO 18.3

Treatment Recommendations for Tardive Dyskinesia

1. Remission is more likely with prompt discontinuation of antipsychotic therapy. If discontinuation is not possible, consider lowering the dose. In patients with long-standing tardive dyskinesia, lowering or discontinuing medication will initially exacerbate symptoms.
2. Discontinue anticholinergic medication if patient is taking concurrently; anticholinergics may exacerbate tardive dyskinesia.
3. Consider switching to clozapine.

Treatment Recommendations for Tardive Dyskinesia

4. Consult neurologist.
5. Consider treatment with tetrabenazine or clonazepam.

Vitamin E may prevent worsening of tardive dyskinesia.

Recent studies of levetiracetam suggest it may be effective in improving symptoms.

Open trial of branched chain amino acids suggests benefit.

Case

- A 14 year old female has been on risperidone 1.5 mg bid for the past 7 years
- She has read on the internet that the medication can cause weight gain, so she abruptly stops the medication.
- She presents with new onset abnormal movements.

- VIDEO 18.2

Withdrawal dyskinesias

- Also known as the withdrawal emergent syndrome
- Choreiform movements which may be seen when antipsychotics are discontinued abruptly
- Resemble Sydenham's chorea
- Most commonly affect the limbs, trunk and neck
- Will disappear spontaneously within several weeks
- If withdrawal dyskinesias occur, the withdrawn antipsychotic can be restarted and tapered over a longer time period

- VIDEO 18.4

Neuroleptic induced tardive dystonia

- Subtype of tardive dyskinesia
- Sustained, slow, involuntary twisting movements affecting the limbs, trunk, neck or face
- Can be generalized, segmental or focal
- Common manifestations include retrocollis, facial grimacing, opisthotonic trunk extension, and hyper-pronation of the arms
- Younger patients more likely to have generalized dystonia

Treatment recommendations for tardive dystonia

1. Remission is more likely with prompt discontinuation of antipsychotic therapy.
2. If continued antipsychotic therapy is necessary, consider switching to clozapine.
3. Treat dystonia with anticholinergic medication such as trihexyphenidyl.

Treatment recommendations for tardive dystonia

4. Consult neurologist.

- Treatments to be considered include botulinum toxin injections for focal dystonia (blepharospasm, cervical dystonia, lingual dystonia), tetrabenazine, or baclofen.
- Intrathecal baclofen can be used for refractory tardive axial dystonia.
- Case reports of bilateral pallidal deep brain stimulation for severe treatment refractory tardive dystonia.

Neuroleptic-induced tardive akathisia

- Persistent akathisia may occur as a subtype of tardive dyskinesia
- Defined as being present for at least one month when the patient is on a constant dose of a neuroleptic
- May occur in association with typical orolingual tardive dyskinesia or tardive dystonia
- Movements affecting the legs most common- marching in place while standing, while sitting crossing/uncrossing legs, rapidly abducting/adducting legs, pumping legs up and down

Neuroleptic-induced tardive akathisia

- Rocking of trunk while sitting
- Arm movements including smoothing hair with palms, rubbing face, folding/unfolding arms, repetitive rubbing anterior surface of the thighs
- Simple vocalizations such as grunting or moaning

Treatment recommendations for tardive akathisia

1. If possible, withdrawal of antipsychotic should be attempted to observe if symptoms resolve.
2. Tardive akathisia does not consistently respond to medication.

Case series reporting responses to tetrabenazine, reserpine, lorazepam, propranolol, combination of lorazepam and procyclidine, and with switching antipsychotic therapy to clozapine.

Questions or Comments?

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Thank you!

for participating in today's

Mental Health Series

Join us next time:

Navigating the chaos: Suicide Intervention with young people

with Noah Spector, MSW, PhD (Cand.)
& Heather Bragg, MSW

February 12th 12-1pm

mentalhealthseries@cheo.on.ca