Movement disorder and antipsychotics medication in children and adolescent

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Introduction
There is significant increase in prescription of antipsychotics in children. While focus on side effects from atypical antipsychotics in children has been on the concerns of weight gain, elevated prolactin and tardive dyskinesia. There is little focus on abrupt discontinuation or switching of antipsychotics which can result in withdrawal dyskinesia. Antipsychotics have a definite role in the treatment of pediatric subjects, but there is a limited data about withdrawal dyskinesia. The risk of withdrawal dyskinesia generally increases with higher doses and longer duration.

Objectives
To discuss psychopathology, biological explanation and clinical management of antipsychotics induced withdrawal dyskinesia. We will also discuss how to slowly taper and discontinue antipsychotic medication and switching from high potency antipsychotic medication to low potency antipsychotic medication.

Methods
This presentation is combination of clinical observation of patients exposed to antipsychotics, its mechanisms of actions in the brain, video recording, and literature review of psychopharmacology.

Findings
There is no guideline available how to discontinue antipsychotic medication in children. The potency of the D2 blockade and duration of treatment have a significant impact on the risk of development of withdrawal dyskinesia upon discontinuation or switching of antipsychotics by upregulation. Withdrawal dyskinesia usually disappears within a few weeks due to downregulation, though sever cases, treatment would be indicated. The clinician may decide to reintroduce the neuroleptic at a lower dose and taper more slowly.

Conclusions
Antipsychotic medications in children are widely prescribed, knowledge of movement disorders associated with stopping or switching antipsychotics is critical.

PRESENTER 1 – “How long does it take for Antipsychotic to get out of my child system?” - Discontinuation of antipsychotic in children

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Introduction
According to the most recently data, there is significant increase in prescription of psychotropic medication and particularly antipsychotic medication in children and adolescent. Antipsychotic medication can have long-lasting consequences particularly due to the side effects for children and adolescent. It should be prescribed appropriately and patient should be evaluated for ongoing necessity for antipsychotic medication.

Objectives
The purpose of this presentation to discuss slowly tapering and discontinuing antipsychotic medication. We also discuss importance of being cautious while switching patient high potency antipsychotic medication to low potency antipsychotic medication,
Methods
We discuss about different case presentations, literature review of psychopharmacology and how we discontinued their antipsychotic medication.

Findings
There is no particular guideline available how to discontinue antipsychotic medication in children and an abrupt or quick discontinuation can lead to withdrawal dyskinesia.

Conclusions
At the conclusion of presentation, participant will have knowledge about importance of slowly tapering antipsychotic medication particularly in children and need for continuous assessment during the tapering for withdrawal dyskinesia.

PRESENTER 2 – Movement Disorders and antipsychotics: the nuts and bolts of how and why it happens
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Introduction
While much of the focus on side effects from atypical antipsychotics (AA) in children has justifiably been on the metabolic concerns of weight gain, elevated prolactin and possible tardive dyskinesia, there has been very little focus on movement disorders associated with stopping or switching antipsychotics. The symptoms of this type of movement disorder can appear as a worsening of the underlying psychopathology or as the onset of a tic disorder, depending on the age group. This can result in the underappreciation of the frequency and magnitude of the problem.

Objectives
This presentation will review the currently available knowledge of how antipsychotics work with a particular focus on the dopamine system and how stopping or switching antipsychotic medications can produce movement disorders.

Methods
This presentation will be a combination of clinical observation of patients exposed to antipsychotics that developed movement disorders and literature review of psychopharmacology and the mechanisms of actions of antipsychotic medications on the brain.

Findings
Antipsychotic medications have a variety of effects but all have some effect in the dopamine system. In regards to movement disorders, the blockade of the dopamine 2 (D2) receptor is particularly pertinent. The potency of the D2 blockade and the duration of treatment have a significant impact on the risk of development of withdrawal symptoms upon discontinuation or switching of antipsychotics. The blockade of the D2 receptors in the key areas of the brain result in upregulation of the D2 receptors in those areas. When the medications are discontinued or the antipsychotics are switched from a high potency to a low potency D2 blocker, the upregulated areas of the brain are hypersensitive to dopamine until downregulation can occur. One of the major unanswered questions is how long does it take to downregulate the D2 receptors after discontinuing the antipsychotics. That is key to determining how long a medication needs to be tapered or how long the risk of withdrawal symptoms can be.

Conclusions
As the use of antipsychotic medications in children and adolescents remains high, an appreciation of the frequency and severity of movement disorders associated with stopping or switching antipsychotics is critical.
PRESENTER 3 – Your eyes see what your brain knows: identifying and understanding the withdrawal movement disorder in kids

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Introduction
Abrupt discontinuation of antipsychotics can result in withdrawal dyskinesia in kids. The presentation can be complex and can be missed by the clinician due to lack of familiarity. Antipsychotic agents are used in children and adolescents to treat a range of psychiatric and neurologic disorders, including schizophrenia, disruptive behavior disorders (DBDs), Tourette's syndrome, and autism spectrum disorders. However, while it is acknowledged that antipsychotics have a definite role in the treatment of pediatric subjects, there is a limited data about withdrawal dyskinesia. The risk generally increases with higher doses and longer duration.

Objectives
The aim of the presentation is to discuss the likely biological explanations for these syndromes.

Methods
We will present the clinical scenarios, and video recording of withdrawal syndrome that will clarify these conditions.

Findings
Withdrawal dyskinesias may take the form of generalized chorea, athetosis, tongue protrusion, chewing movements, facial grimacing, finger, toe, ankle movements, ballistic movements, vocalizations, and spasmodic torticollis. The movements worsen with increasing level of arousal or anxiety. The most important factor in the management of withdrawal dyskinesia is to explain the situation to the patient. Often the patients have not noticed the problem or don’t seem to care. The patient can at least be partially reassured that withdrawal dyskinesia usually disappears within a few weeks. If the patient’s movements become so severe that they impair day-to-day activity treatment would be indicated. The clinician may decide to reintroduce the neuroleptic at a lower dose and taper more slowly. Another option particularly when anxiety is prominent could be to prescribe benzodiazepines. Some evidence suggests that clonidine might also be effective.

Conclusions
Although spontaneous adverse events or observations have traditionally been used to determine movement disorders, objective research instruments and defined criteria may be more sensitive. Careful, objective evaluation during all stages of treatment is critical for early identification and interventions.