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Medication for the Treatment of Aggressive Behaviour in Developmental Disabilities

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In the following discussion, I describe the pharmacological treatment of aggressive behaviour in children and adults with Developmental Disabilities (Autism Spectrum and Intellectual Disability). In general, we have pharmacological treatments for symptoms, not for diagnoses in psychiatry. Consequently, medications which reduce aggression will generally work regardless of the underlying diagnosis.

In discussing the use of medications with caregivers, one of the first things I try to point out is that there are no pharmacological treatments that have been proven to significantly decrease the “core” symptoms of Autism Spectrum Disorder (social interactions, communication, repetitive behavior) or Intellectual Disability. Unfortunately, we cannot directly treat the underlying neurobiological cause of Developmental Disabilities. Instead, the most important interventions are non-pharmacological – IBI, ABA, speech and language therapy, occupational therapy, education, etc. However, some medications have been shown to be of benefit in reducing behaviours which interfere with the ability of people with Developmental Disabilities to participate in these interventions. Consequently, when used, medication should be viewed as a way to enhance or facilitate interventions described above. They are not a treatment in and of themselves and, when used, should be part of a larger treatment program including other interventions as outlined above.

The two most common reasons that parents come to see me about the possibility of medication are aggression *and* inattention and/or hyperactivity. In this edition of the Bulletin, I will discuss the use of antipsychotics to treat aggressive behaviour. In future editions of the Bulletin, I will discuss the use of medications to treat inattention and hyperactivity in people with Developmental Disabilities.

Medication for the Treatment of Aggressive Behaviour

Perhaps because it is so common, and sometimes severe, aggression (by which I mean aggression toward others, the self, or property) is the most common reasons for parents and guardians of people with Developmental Disabilities to inquire about the possible use of medication. Moreover, among persons with Developmental Disabilities, aggression appears to be more common than in the general population. Aggression in people with Developmental Disabilities most commonly occurs in response to what I term frustration and is probably best described as resulting from poor emotional regulation and poor impulse control. (Please note that I am obviously not a behaviour analyst and this description is not meant as any kind of functional analysis – it is rather just my simplistic clinical observation). Medications work on neurological functions, not behaviour. I tell parents that the role of medication in the treatment of aggression is to improve impulse control, not to change behaviour directly. When medications help with these kinds of behaviours, parents and caregivers tell me that there are less episodes of aggression, and the episodes are less intense, shorter, easier to redirect, and take longer to evolve (thus allowing more time for intervention).

The medications which have the most evidence to support their use in the treatment of aggression in Developmental Disabilities are medications which block the neurochemical dopamine. Dopamine antagonists are typically used to treat adults with schizophrenia and so are usually called antipsychotics. It is important to keep in mind that they are called this purely because that is their most common use and there is no relation between schizophrenia and Developmental Disabilities. These medications can be divided into two groups: older antipsychotics, called “typical antipsychotics”, which blocked only dopamine, and newer antipsychotics, called “atypical antipsychotics”, which block both dopamine and serotonin. An example of the typical antipsychotics is haloperidol (Haldol), while examples of the atypical antipsychotics include risperidone (Risperdal), paliperidone (Invega), aripiprazole (Abilify), olanzapine (Zyprexa), and ziprasidone (Zeldox).

There are numerous studies of haloperidol in children and adolescents with Developmental Disabilities which have shown that it can be effective in reducing aggressive behaviour. Some of these studies demonstrated that it (and, probably medications like it) can also have a positive effect on learning, presumably due to an increased amount of time spent “on task”. Studies also showed that the combination of medication and behavioural modification was more effective for reducing aggression than either intervention alone.

Similarly, risperidone, aripirazole, and olanzapine have been shown to be effective in reducing aggressive behaviour. The largest study, published in the New England Journal of Medicine, showed that, after eight weeks of treatment, subjects taking risperidone had scores on a rating scale for aggression that were about half of that for subjects taking a placebo. From the perspective of whether there was significant improvement (rated by parents), about 75% of the parents of subjects on risperidone said there was a significant improvement, while only about 10% of the parents of subjects taking placebo said there was a significant improvement. A later study showed that after six months of treatment with risperidone, the treatment gains of a reduction in aggression were maintained (i.e., for most children, its effects didn’t “wear off”).

While all of these medications can be sedating, this is rarely a problem when used at appropriate doses and increased gradually. All of these medicines can increase people’s appetites, although the newer medications are more likely to cause this and the resulting weight gain. One large study recently indicated that the average weight gain in 8 weeks in people taking risperidone was 2.7kg. After 6 months, the average weight gain was about 5kg. Thankfully, this weight gain does not continue at this rate but tends to plateau after 6 to 8 months. However, in some patients, the weight gain with risperidone or one of the other atypical antipsychotics can be significant and dramatic and concerns about long term health implications, particularly in relation to cholesterol and glucose regulation, are noteworthy.

While the atypical antipsychotics may cause weight gain, they appear to be less likely to cause certain neurological side-effects, and because of this, they have become the most widely used medications for treating aggression in people with Developmental Disabilities. They can all cause stiffness and tremors. These are not permanent, but can be uncomfortable. All antipsychotics can cause people to develop odd, involuntary

movements, usually starting around the mouth and shoulders. It used to be believed that these movements were permanent when people developed them, but we now feel that for most people they are probably not permanent so long as the medication is stopped relatively quickly.

In discussing the role of medications, it is important to discuss with patients and parents the risks and benefits of medication use. It is ultimately to the parents and the patient to decide whether the potential benefits of medication outweigh the potential risks. Once on the medication, the benefits in terms of behaviour and the side effects need to be monitored and the risk-benefit analysis reviewed regularly.

It is also important to periodically assess whether the medicines are still needed. The only way to do this is to wean the patient off of the medicine. It is important, both when starting and stopping a medication, to try to keep other potential factors (such as school holidays, for example) in mind and to try to time any change in medication so that other factors are as stable and unchanging as possible.

Suggested dosing of antipsychotics for treatment of aggression (based solely upon my opinion and experience):

- Risperidone (Risperdal), Haloperidol (Haldol)
Start at 0.25mg once daily at bedtime; increase weekly by 0.25mg daily until reach 1.5mg to 2mg daily (broken into two equal doses, one in the morning and one at night)
- Aripiprazole (Abilify)
Start at 2-2.5mg once daily at bedtime; increase weekly by 2-2.5mg daily until reach 10-15mg daily at bedtime
- Olanzapine (Zyprexa)
Start at 2.5mg once daily at bedtime; increase weekly by 2.5mg until reach 10-15mg at bedtime

The information contained in this article is not intended nor implied to be a substitute for professional medical advice; it is provided for educational purposes only. Readers assume full responsibility for how they choose to use this information. Always seek the advice of a physician or other qualified healthcare provider before starting any new treatment or discontinuing an existing treatment. Talk with a healthcare provider about any questions regarding a medical condition. Nothing contained in this article is intended to be used for medical diagnosis or treatment.

Annual C. Kingsley Allison Research Grant Competition

The Developmental Disabilities Program in the Department of Psychiatry at the Schulich School of Medicine & Dentistry is pleased to welcome submissions to the annual C. Kingsley Allison Research Grant Competition. The C. Kingsley Allison Research Grant is meant to facilitate research specific to Intellectual Disabilities. **Proposals may involve investigations of causes, diagnosis, and/or treatment of Intellectual Disabilities. Proposals may also involve conditions that are comorbid with Intellectual Disability (such as Autism Spectrum Disorder or Epilepsy), but the project must ultimately be directly about Intellectual Disability.** That is, for example, a proposal about Autism Spectrum Disorder will only be accepted if it is about Autism Spectrum Disorder in people with Intellectual Disability.

Relevance statements and project descriptions must clearly outline how the proposed research relates to this population. Relevance to the field of Intellectual Disabilities is one of the most important criteria in reviewing proposals. The review committee looks to applicants to help us understand why their particular project warrants support. Although the relevance may seem obvious to the applicant, the review committee still looks for an explicit statement about relevance – it is up to the candidate to convince the reviewers of the project’s relevance.

This competition is open to any student (undergraduate or graduate), faculty member, or employee of the Western University Community. Applications are also invited from non-Western University persons working with agencies in the London region providing services to people with intellectual and developmental disabilities and their families. In all cases, a member of the Western University faculty (who is eligible to hold research funds) must be listed as an Investigator or Supervisor. Applications from all departments of the University will be accepted, without preference to any department, school, or faculty. Value of an award may range up to \$9,000, with the actual value of each award being determined by the number of funded proposals and the quality of each proposal. The awards are not limited in scope – rather they are for any and all research projects which are of relevance to the understanding of the causes, diagnosis, and treatment of intellectual disabilities.

***Projects will only be funded once. Applicants will only be funded once in a 3-year period.**

Proposals must be received by October 31. Funding for successful projects will be released to the PI **only after ethics approval has been received.**

For more detailed information about this competition and the application criteria and process, please visit our website:

https://www.schulich.uwo.ca/ddp/research/research_grants.html

Interested applicants can fill out the application form here:

https://uwo.eu.qualtrics.com/jfe/form/SV_4TqhBY6ey29MNAp

Developmental Disabilities Clinical and Research Rounds

The Developmental Disabilities Clinical and Research Rounds began again on October 13, 2021. Talks will be held online and will run at 4pm on the second Wednesday of each month.

For the foreseeable future, these rounds will continue to run online only, using zoom.

The first talk in this series was given by Dr. Rob Nicolson, chair of the Developmental Disabilities Program. This talk was titled: "Ritual De Lo Habitual: Repetitive Behaviour in Autism Spectrum Disorder."

Recordings of our talks are available on our website here:

https://www.schulich.uwo.ca/ddp/education/continuing_professional_development.html

The next talk will be held on November 10, 2021. We are pleased to welcome Dr. Maha Saleh, Department of Paediatrics, Medical Genetics, Schulich School of Medicine & Dentistry, Western University.

Dr. Saleh's talk will start at 4pm. To register for this talk in advance, or join it on November 10, please click here:

https://us06web.zoom.us/webinar/register/WN_syKvMC4HSpYGRzSSsq6DKg

The schedule for the year is updated frequently on our website here:

https://www.schulich.uwo.ca/ddp/education/continuing_professional_development.html

Upcoming Conferences on Developmental Disabilities

2nd Annual London and Region Fetal Alcohol Spectrum Disorder Conference

The Second Annual London and Region Fetal Alcohol Spectrum Disorder Conference is scheduled for October 27, 2021. Registration is open for this event. This is an online event from 8:30am until 4:30pm.

The Keynote speakers for this event are:

Dr. Jean M. Clinton, M.D. Department of Psychiatry and Behavioural Neurosciences at McMaster University. Dr. Clinton's talk is titled: "Building Healthy Brains: The way forward."

Dr. James N. Reynolds, Ph.D. Department of Biomedical and Molecular Sciences, Centre for Neuroscience Studies, Queen's University. Dr. Reynold's talk is titled: "The Evolution of the Science Behind Prenatal Alcohol Exposure."

Dr. Michael Rieder, M.D., Ph.D. Departments of Paediatrics, Physiology & Pharmacology, and Medicine, University of Western Ontario. Dr. Rieder's talk is titled: "Cannabinoids and FASD".

More information and the link for registration is available on our website here:

https://www.schulich.uwo.ca/ddp/research/london_and_region_fetal_alcohol_spectrum_disorder_conference/index.html

Health and Wellbeing in Developmental Disabilities

The Health and Wellbeing in Developmental Disabilities Virtual Conference, held online on February 9 and 10, 2022, provides a forum for over 200 health care professionals, students, educators, caregivers of individuals with developmental disabilities, social workers, academic researchers, and strategic decision makers from across Canada to help improve the health and wellbeing of people with developmental disabilities.

Outcomes

After participating in this conference, participants will be able to discuss the health and wellbeing across the life span for persons with a developmental disability in terms of:

- Effective practices to improve health and wellbeing
- How interprofessional collaboration can improve the delivery of health care
- Innovative and emerging practices and outcomes in the assessment and treatment of complex needs
- The role of community health care in providing appropriate care

Who should attend

- Health Care Professionals
- Developmental Service Providers
- Students in Health Care Disciplines
- Caregivers
- Academic Faculty and Researchers
- Policy and Decision Makers

This conference will include plenary talks, workshops, and an interactive poster session.

This event is fully accredited by the College of Family Physicians of Canada and the Royal College of Physicians and Surgeons.

For more information, dates, and registration info, check the website here:

<https://www.healthandwellbeingindd.ca/>

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