

MEDICATION MANAGEMENT OF SCHIZOPHRENIA

And the role of community pharmacists in
schizophrenia care



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EPIDEMIOLOGY

- **Prevalence:** 1 in 100 (1%)
- **Age of Onset:**
 - Late teens to early 20's in men
 - Late 20's in women
- **Pre-Diagnosis**
 - 2 – 5 years of social withdrawal, loss of interest in school or work, poor hygiene, unusual behaviour / outbursts of anger

RISKS

- **Life Expectancy:** shortened by ~20 years
 - Impacted by chronic conditions, lifestyle, medications – **why all our support is important!**
- **Suicide:** 25-50% attempt suicide
- **Smoking:** 75-90% smoke
- **Other substance usage** up to 3x of average population
 - 40-50% drink alcohol, 20% use marijuana

SYMPTOMS

Positive Symptoms	Negative Symptoms
<ul style="list-style-type: none">• Delusions (distortion in beliefs)• Hallucinations (distortion of senses)• Aggression / Hostility• Disorganized Speech• Motor agitation• Unusual behaviour	<ul style="list-style-type: none">• Social withdrawal• Reduced motivation/pleasure• Reduced communication• Blunted / Flat affect• Inattention to hygiene
Cognitive Symptoms	Mood Symptoms
<ul style="list-style-type: none">• Attention deficits• Memory impairment• Difficulty acquiring skills	<ul style="list-style-type: none">• Depression / anxiety• Hopelessness• Suicidality

TREATMENT GOALS

- Reduce threat to self and others – **safety first**
- Reduce acute symptoms
- Minimize medication side effects
- Minimize long term risks
- Maximize social functioning, improve quality of life
- Maximize adherence to medication and program
- Prevent relapse



TREATMENT EFFECTS

- **Medications have similar efficacy**, so importance is to tailor medications to the individual patient and their clinical circumstances
- An adequate trial of medications is 4-8 weeks at a therapeutic dose, with at least some response
 - Positive symptoms may improve quicker than negative symptoms
 - Negative symptoms may gradually improve over 6-12+ months time

MEDICATIONS

<i>Typical Antipsychotics</i>	<i>Atypical Antipsychotics</i>	
First Generation Antipsychotics	Second Generation Antipsychotics	“Third Generation” Antipsychotics
Haloperidol (Haldol®)	Clozapine (Clozaril®)	Aripiprazole (Abilify®)
Chlorpromazine (Largactil®)	Olanzapine (Zyprexa®)	Brexpiprazole (Rexulti®)
Methotrimeprazine (Nozinan®)	Quetiapine (Seroquel®)	
Periciazine (Neuleptil®)	Risperidone (Risperdal®)	
Fluphenazine (Modecate®)	Paliperidone (Invega®)	
Flupentixol (Fluanxol®)	Lurasidone (Latuda®)	
Zuclopenthixol (Clopixol®)	Asenapine (Saphris®)	
Perphenazine	Ziprasidone (Zeldox®)	
Trifluoperazine		
Loxapine		
Pimozide		

FIRST GENERATION

Advantages	Disadvantages
<ul style="list-style-type: none">• Lower cost• Improves positive symptoms• Less side effects on weight gain and lipids• Availability of multiple long acting injections	<ul style="list-style-type: none">• Significant risk of movement/neurologic side effects *• Minimal effect on negative symptoms / may worsen• Increased prolactin levels **

* movement effects include prolonged muscle spasms, tremor, jitteriness, slowed movement, tongue thrashing

** elevated prolactin may cause gynecomastia, amenorrhea, sexual dysfunction, osteoporosis (risperidone & paliperidone, SGA's, also have this risk)

SECOND GENERATION

Advantages	Disadvantages
<ul style="list-style-type: none">• Broad profile of action, improves positive and negative symptoms• Reduced movement side effects• Minimal effects on prolactin**	<ul style="list-style-type: none">• More side effects on weight gain and lipids*• Higher cost• Constipation, dry mouth, sedating side effects

*metabolic effects include weight gain, cholesterol elevation, increased blood pressure & risk of diabetes

**Risperidone and Paliperidone have increasing effects on prolactin

“THIRD” GENERATION

Advantages	Disadvantages
<ul style="list-style-type: none">• Low side effects on weight and lipids• Low movement side effects*	<ul style="list-style-type: none">• Activating effects may appear as worsening psychoses• *Akathisia (“inner restlessness”) can worsen symptoms

Aripiprazole and Brexpiprazole considered “third” generation antipsychotics due to low metabolic risks, and its unique effect on dopamine receptors in body vs. first and second generation antipsychotics

ARIPIPRAZOLE (ABILIFY®)

- Dosage Forms and Schedule:
 - Oral tablets **daily**
 - Long acting, depot injection (Abilify Maintena®) **monthly**
 - Requires overlap of 10-20mg oral daily for 14 days when starting

BREXPIPRAZOLE (REXULTI®)

- Dosage Forms and Schedule:
 - Oral tablets **daily**
- Licensed and marketed in Canada in 2017, so relatively new medication
- Compared to aripiprazole, brexpiprazole has lower akathisia, insomnia, restlessness, nausea

OLANZAPINE (ZYPREXA®)

- Dosage Forms and Schedule:
 - Oral tablets **daily**, or **as needed** (for acute agitation)
 - Rapid, oral dissolving tablets (ODT) **daily**, or **as needed**
 - **Short-acting**, injection – used on **as needed basis**

PALIPERIDONE (INVEGA®)

- Dosage Forms and Schedule:
 - Oral tablets **daily**
 - Long acting, depot injection (Invega Sustenna®), **monthly**
 - No oral tablet overlap required when starting
 - **Ultra-long acting**, depot injection (**Invega Trinza®**), **every 3 months**
 - Must have been on Invega Sustenna® with acceptable tolerance and efficacy for ≥4 months, with the last 2 doses equivalent in strength, **before starting** Invega Trinza®.
 - Dose is 3.5x Invega Sustenna® dose = appropriate Invega Trinza® dose
 - Licensed and marketed in Canada starting 2016 – newer product!

QUETIAPINE (SEROQUEL®)

- Dosage Forms and Schedule:
 - Oral tablets **daily**
 - Immediate release tablets **multiple times daily**
 - Extended release tablets (Seroquel XR® or generics) **once daily**

RISPERIDONE (RISPERDAL)

- Dosage Forms and Schedule:
 - Oral tablets **daily**
 - Oral disintegrating tablets
 - Long acting, depot injection (Risperdal Consta®) **every 2 weeks**
 - Requires 3 week overlap with oral tablets daily when starting

COVERAGE

- All medications above, except brexipiprazole, are readily covered by Alberta Government Drug Plans in their oral tablet forms.
- All medications with a long acting, injectable form are covered by Alberta Government Drug Plans through completion of **special authorization** forms
 - If paperwork approved, coverage is then approved

FORMULATIONS

Formulation	Advantages	Disadvantages
Oral	<ul style="list-style-type: none">• Flexibility of dosing• Faster effect and onset of action	<ul style="list-style-type: none">• Daily medication dosing – adherence challenges• Potential stigma of daily medications
Injectable	<ul style="list-style-type: none">• Increased adherence (convenience)• Less frequent dosing• Stability of dosing	<ul style="list-style-type: none">• Stigma of injections• Fear of injections• Lack of dose flexibility• Side effects may take longer to reverse

WHAT TO PICK?

- Medication that is used **depends on patient, it is individualized!**
 - Clinical condition and assessment
 - Response, side effects to previously trialed medications
 - Efficacy of medication
 - Interactions with other medications
 - Risks of medication

HOW DOES SMOKING AFFECT THINGS?

- Cigarette smoking interacts with certain antipsychotics, and causes them to be processed (metabolized) by the body **quicker**
 - This reduces the levels of medication in the body than under non-smoking conditions
 - * mainly affects olanzapine, clozapine, and ziprasidone
 - **Nicotine replacement therapy (NRT) does NOT affect this metabolism, unlike cigarette smoking!**
- **If patient starts smoking** -> decrease in antipsychotic medication levels, reduced efficacy, potential dose increase needed
- **If patient quits smoking** -> increase in antipsychotic levels, increased efficacy, potential dose decrease needed



CHALLENGES WITH TREATMENT

- Stigma of condition
- Patient denial (of need for treatment)
- Medication and program adherence
- Medication side effects
- Substance Abuse
- Suicidal Risks

MEDICATION **NON**-ADHERENCE

- **Potential reasons:** patient choice, lack of insight, medication side effects, stigma, pill burden, perceived ineffectiveness etc. etc.
- **Consequently...**
 - **Relapse!** Non-adherence – 20 in 25 will relapse (80%) vs. adherence 6 in 25 (~25%)

RELAPSE CONSEQUENCES

- Rehospitalization
- Employment difficulty
- Housing Challenges
- Social Difficulties
- Increased risk of dangerous behaviours
- Worsened course of illness
- Suicide / Death

FACTORS AFFECTING RELAPSE

- Course of condition
- Medication effectiveness (or lack of) in patient
- **Non-adherence**
- Stress
- Substance usage or abuse
- Other medical issues

HOW CAN US PHARMACISTS HELP?

- Health Promotion (smoking cessation, healthy diet)
- Chronic Disease Management
 - Managing lipids, diabetes, and associated metabolic risks
 - Managing movement side effects
- Adherence Support
 - Compliance packaging
 - Administration of medications
- Monitoring of adherence, efficacy, side effects, & safety
 - **Community pharmacists are one of the most accessible healthcare professionals.** Involving us in the circle of care with other health care professionals and support staff is invaluable.



OUR STORY

- **Close rapport and care for Iris Court:**
- Compliance packaging and daily medication delivery to nearby home (Iris Court)
 - Delivery into safe lockbox in rooms, coordinate with Home Care and staff for medication administration
- Coordinate with patient, psychiatrist, mental health therapists, home staff, other allied health professionals to facilitate seamless care
- Care planning with patient, promoting health initiatives. Follow-up with patient lab work, provide recommendations for optimizing health and care.





THANK YOU!