Antipsychotics adverse effects

System affected		More with	Onset

Endocrine	Hyperprolactinemia
	- Due to dopamine blockade in the tuberounfundibularcsystem.
	- Associated with:
	  - Gynocomastia
	  - Galactorrhe
	  - Menstrual irregularities
	  - Decreased libido
	  - Sexual dysfunction
	Wt. gain
	- Due to:
	- Anti histaminic
	- Antimuscarinic
	- Anti serotonergic effects.
		(1st > 2nd)
		
		(2nd > 1st)	

CVS	1. Due to a-adrenergic blockade: - Orthostatic hypotension - Reflex tachycardia 2. Sinus tachycardia (due to anticholinergic) 3. Sudden cardiac death 4. Prolonged QTc -> PVA (eg: Torsade de pointes		

	syndrome) **MOST COMMON WITH THIORIZADONE (FGA)** 5. Elevation of serum TAGs and cholesterol.		
Anticholinergic adverse effects	? Dry mouth ? Constipation ? Tachycardia (sinus tachy) ? Blurred vision ? Impairment of erection ? Urinary retention ? Impaired memory ? **Paralytic ileus** ? **Necrotizing enterocolitis**		
CNS 1 **EPS**(movement disorder due to excess dopamine blockade in the nigrostatioal pathway - Dystonia - Akathasia - Pseudoparkinson... - Tardive dyskinesia	EPS (1-4 1. **Dystonia**: Prolonged tonic contractions. - They can be life threatening, as in the case of pharyngeal laryngeal dystonias. - Contributes to patient's non adherence. - They include trismus, glossospasm, tongue protrusion, pharyngeal–laryngeal dystonia, blepharospasm, oculogyric crisis (spasmodic movements of the	**1st >>>>> 2nd**	1-4 da initiat increa the do antips ic

	eyeballs into a fixed position, usually upwards), torticollis, and retrocollis. - **TREATMENT: IV or IM BDZ or anticholinergics.**		
	2. **Akathasia:** Inability to sit still, associated with functional motor restlessness (pacing, shuffling, tapping, shifting) - Associated with **dysphoria, insomnia, increased suicidality, tardive dyskinesia.** - **TRETMENT:** **1. BDZ (but not in abuse)** **2. B-blockers (propanolol, nadolol, metoprolol)** **3. Serotonin antagonists (cryptoheptadine, mirtazipine, trazodone).**	**1st >>>>> 2nd** - Quitipine and clozapine have the lowest risk to produce akathasia.	

3. Pseudoparkinsonism

- Due to D_2 blockade in the nigrostriatum.
- More common with FGAs.
- The onset is typically 1 - 2 weeks after initiation or a dose increase.
- Can be treated with anticholinergic drugs (trihexyphenidyl, benztropine, orphenadrine), but may produce euphoria.
- Amantadine may be effective, but have less effect on memory function.
- Rotigotine, a dopamine agonist, may be effective.
- The risk of pseudoparkinsonism with SGAs is low, but may occur with risperidone at relatively large doses.
- Quetiapine, aripiprazole, and clozapine are reasonable alternatives in a patient experiencing EPS with other SGAs.

4. Tardive dyskinesia

- It is a syndrome characterized by abnormal involuntary movements buccal–lingual–masticatory, or orofacial.
- The onset is usually insidious, and appears late after initiation.
- The first detectable signs of tardive dyskinesia are mild forward, backward, or lateral movements of the tongue.
- Associated with higher overall morbidity and mortality.
- More prevalent with FGAs (20 - 50%).
- Short-term treatment of TD with either clonazepam or ginkgo biloba may be effective.
- Clozapine decreases abnormal involuntary movements.

early after treament + decrease with time

Early treatr + decr with t

2 Sedation

- Better at bedtime (can decrease daytime sedation)
-

- Chlopromazine
- Thioridazone
- Clozapine
- Olanzapine
- Quetipine

3 Seizures

- More seizures.

↳ Antipsychotics decrease the threshold for seizures.

*Seizures reported with many antipsychotics but more with:

- **Clozapine**
-
- **Chlorpromazine**

highest potential

lowest

potential

seizures:

4 **NMS** Neuroleptic malignant syndrome. (temperature > 38°C, loss of consciousness, autonomic dysfunction (tachycardia, labile blood pressure,diaphoresis, tachypnea, or urinary or fecal incontinence), and muscle rigidity.	- can occur after anti-psychotics discontinuation especially when depot agents are used. - Develops rapidly over 24-72 hours Possible mechanisms include disruption of the central thermoregulatory process or excess production of heat secondary to skeletal muscle contractions. **Increased:** - **WBCs** - **CK** - **AST,ALT** - **LDH** - **Myoglobinuria** imp * **TREATMENT:** Should begin with antipsychotic discontinuation and supportive care. 1. **Bromocriptine** 2. **Amantidine** 3. **Dantrolene (skeletal muscle relaxant)**	*Lowest potential with: Haloperidol, etc. Thioridazone, pimozide, Risperidone, fluphenazine, trifluoperazine within 24-72 hours **Less common with 2nd (like clozapine)** In 0.5%-1% receiving 1st generation.	Rapid within 72 ho

Ophthalmologic effects	1. **Exacerbation of narrow -angle (angle-closure) glaucoma** (anticholinergic effect). 2. **Opaque deposits** in the cornea and lens (chlorpromazine). 3. **Cataract** (risperidone and quetiapine). 4. **Retinitis pigmentosa** (thioridazine doses > 800 mg daily), due to melanin deposits and can result in permanent visual impairment or blindness.		
Genitourinary system	1. **Urinary hesitancy and retention** secondary to anticholinergic effects (FGAs and clozapine). 2. **Urinary incontinence** due to α-blockade. 3. **Sexual dysfunction** - (dopaminergic blockade, hyperprolactinemia, histaminergic blockade, anticholinergic effects, and α-adrenergic blockade). - Manifested by decreased libido, erectile dysfunction,	**1st and clozapine >>>** **Clozapine**	

	difficulty achieving orgasm, and ejaculatory abnormalities. 4. **Priapism** (unprovoked sustained and painful erection). - May be due to α-adrenergic receptor blockade, leading to intracavernosal blood stasis).	first 8 weeks of therapy	

Hemato	- **Agranulocytosis**
	  - **If the absolute neutrophil count (ANC) is < 500/µL, the antipsychotic should be discontinued and the ANC monitored closely until it returns to normal and also monitored closely for the development of infections.**
	  - **The baseline ANC must be at least 1,500/µL in order to start clozapine. - Weekly ANC monitoring for the first 6 months of**
		Clozapine
		Chlorpromazine
		Olanzapine
			First 8 weeks therap
			
			2 MO

	therapy is required. Then every 2 weeks for the next 6 months. - After this, monitoring can be decreased to monthly if all ANCs remains greater than 1,500/µL. - If at any time the ANC drops to less than 500/µL (0.5 × 109/L) clozapine must be discontinued.		
Skin	1. Contact dermatitis 2. Skin reaction with Eosinophilia (ziprasidone). 3. Photosensitivity 4. Blue-gray or purplish skin coloration in areas exposed to sunlight, concurrent with corneal	Ziprasidone. (all, especially chloropromazine). (chlorpromazine).	

	or lens pigmentation. **5. Exposure to sunlight should be limited (blocking sunscreen, hats, protective clothing, and sunglasses).**		
Miscellaneous	**Sialorrhea (drooling) in 54% of patients.** - May be due to antagonistic effect on both alpha 1 and 2 adrenergic receptors at the salivary glands leading to vasodilation and increased blood flow. - **TREATMENT: Anticholinergics such as benztropine and atropine, and α2 -agonists such as clonidine.**	**Clozapine**	