

Case Management Discussion

(antipsychotic side effects)

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Case Vignette

Ahmad is a 28 year-old single male who came to Emergency room by his family with progressive changes in his behavior started 7 months ago.

Since then, he became agitated; eat only canned food but not his cooked food by his family afraid of being poisoned. He talks to himself and stares occasionally on the roof of his room.

He had two brief psychiatric hospitalizations in his late teens that were precipitated by anger at his boss and voices commenting about his behavior.

His personal history indicated that he was a healthy child, but his parents report that he was a bed wetter and seemed slower to develop than his brothers and sisters.

He sees a psychiatrist for 15 minutes every two months but sometimes misses his appointment.

His parents support him financially and he has a social worker whom he sees often.

Ahmad was treated with Haloperidol which gave him muscle cramps especially in his neck, he was then treated with Olanzapine and gained 20 pounds and developed Diabetes Mellitus.

During his illness course, the patient's family became less supportive to him & he became less compliant on his treatments.

His psychiatrist would like to switch him to long acting injectable antipsychotic treatment but Ahmad is afraid of injections and isn't sure that he needs medication.

(Considering the case above)

Discuss the types of antipsychotics, indications, side effects, etc

Discuss in details Extrapyramidal side effects and NMS

Biological therapies

- ❑ Antipsychotic medications are the mainstay of the treatment of schizophrenia.
- ❑ Generally, they are safe.
- ❑ Two major classes:
 - Dopamine receptor antagonists (haloperidol, chlorpromazine)
 - Serotonin-dopamine receptor antagonists (Risperidone, clozapine, olanzapine).
- ❑ Depot forms of antipsychotics eg. Risperidone Consta is indicated for poorly compliant patients.
- ❑ - Electroconvulsive therapy (ECT) for catatonic or poorly responding patients to medications.

Common side effects of antipsychotic medication (Taylor et al, 2005)

<i>First generation antipsychotics</i>	<i>Second generation antipsychotics</i>	<i>Clozapine</i>
Extrapyramidal effects Dystonia Pseudoparkinsonism Akathisia Tardive dyskinesia	Olanzapine Weight gain Sedation Glucose intolerance and frank diabetes mellitus Hypotension	Sedation
Sedation		Hypersalivation
Hyperprolactinaemia	Risperidone Hyperprolactinaemia Hypotension EPS at higher doses Sexual dysfunction	Constipation
Reduced seizure threshold		Reduced seizure threshold
Postural hypotension	Amisulpiride Hyperprolactinaemia Insomnia Extrapyramidal effects	Hypo & hypertension
Anticholinergic effects Blurred vision Dry Mouth Urinary Retention	Quetiapine Hypotension Dyspepsia Drowsiness	Tachycardia
Neuroleptic malignant syndrome		Pyrexia
Weight gain		Weight gain
Sexual dysfunction		Glucose intolerance and diabetes mellitus
Cardio-toxicity (including prolonged QTc)		Nocturnal enuresis
		Rare serious side effects Neutropaenia 3% Agranulocytosis 0.8% Thromboembolism Cardiomyopathy Myocarditis Aspiration pneumonia

Side effects of antipsychotics

TABLE
RECEPTOR BLOCKADE AND ANTIPSYCHOTIC SIDE EFFECTS²

<i>Receptor Type</i>	<i>Side Effects</i>
D ₂	EPS, prolactin elevation
M ₁	Cognitive deficits, dry mouth, constipation, increased heart rate, urinary retention, blurred vision
H ₁	Sedation, weight gain, dizziness
α ₁	Hypotension
5-HT _{2A}	Anti-EPS (?)
5-HT _{2C}	Satiety blockade

D=dopamine; EPS=extrapyramidal symptoms; M=muscarine; H=histamine; 5-HT=serotonin.

Robinson DS. *Primary Psychiatry*. Vol 14, No 10. 2007.

Side effects of antipsychotics

Table 2

Relative Adverse Effect Incidence of Antipsychotics

	Sedation	EPS	Anticholinergic	Orthostasis	Seizures	Prolactin Elevation	Weight Gain
Typical Low Potency							
Chlorpromazine	High	Moderate	Moderate	High	Moderate	Moderate	Low
Thioridazine	High	Low	High	High	Low	Very high	Moderate
Typical High Potency							
Trifluoperazine	Low	High	Low	Low	Moderate	Moderate	Low
Fluphenazine	Low	Very high	Low	Low	Low	Moderate	Low
Thiothixene	Low	High	Low	Low	Low	Moderate	Low
Haloperidol	Very low	Very high	Very low	Very low	Low	Moderate	Low
Loxapine	Moderate	High	Low	Moderate	Low	Moderate	Very low
Molindone	Very low	High	Low	Low	Low	Moderate	Very low
Atypicals							
Clozapine	High	Very low	High	High	High	0	High
Risperidone	Moderate	Very low*	Low	Moderate	Low	0 to moderate††	Low
Olanzapine	Moderate	Very low†	Moderate	Low	Low	Very low	Moderate
Quetiapine	Moderate	Very low	Low	Low	Low	0	Low
Ziprasidone	Low	Very low	Low	Low	Low	0	Very low
Aripiprazole	Low	Very low	Low	Low	Low	0	Very low

* Very low dosages (<8 mg/day); † With dosages <20 mg/day; †† Dose related. EPS: extrapyramidal symptoms.

Side effects of antipsychotics

TABLE 2
ANTIPSYCHOTICS: SAFETY AND TOLERABILITY¹

<i>Item</i>	<i>Typical Neuroleptic</i>	<i>Clozapine</i>	<i>Risperidone</i>	<i>Olanzapine</i>	<i>Quetiapine</i>	<i>Ziprasidone</i>	<i>Aripiprazole</i>
EPS	+ to +++	±	± to +++*	± to +*	±	± to +*	± to +
TD	+++	±	± to ++	± (?)	± (?)	± (?)	± (?)
Somnolence	± to +++	+++	±	++	++	±	±
Prolactin	+++	±	+++	±	±	±	±
Weight	± to ++	+++	+	+++	++	±	±
Dyslipidemia	± to +	+++	+	+++	++	±	±
DM	± to +	+++	+	+++	++	±	±
QTc	+	++	+	+	+	++	±
Orthostatic BP↓	± to +++	+++	++	+	++	±	±

*Dose-related.

Key: ±=none-to-minimal; +=mild; ++=moderate; +++=marked; ?=no data, compared to placebo rates.

EPS=extrapyramidal symptoms; TD=tardive dyskinesia; DM=diabetes mellitus; QTc=corrected Q-T interval; BP=blood pressure.

Side effects of atypical antipsychotics

Side Effects of Atypical Antipsychotics: *Shift in Risk Perception*

Prior Safety Concerns

Current Safety Concerns

Neurologic Side Effects

EPS + TD

Weight Gain

Insulin Resistance

Hyperlipidemia

QTc

Hyperglycemia

CVD

Weight Gain

Diabetes

Hyperglycemia

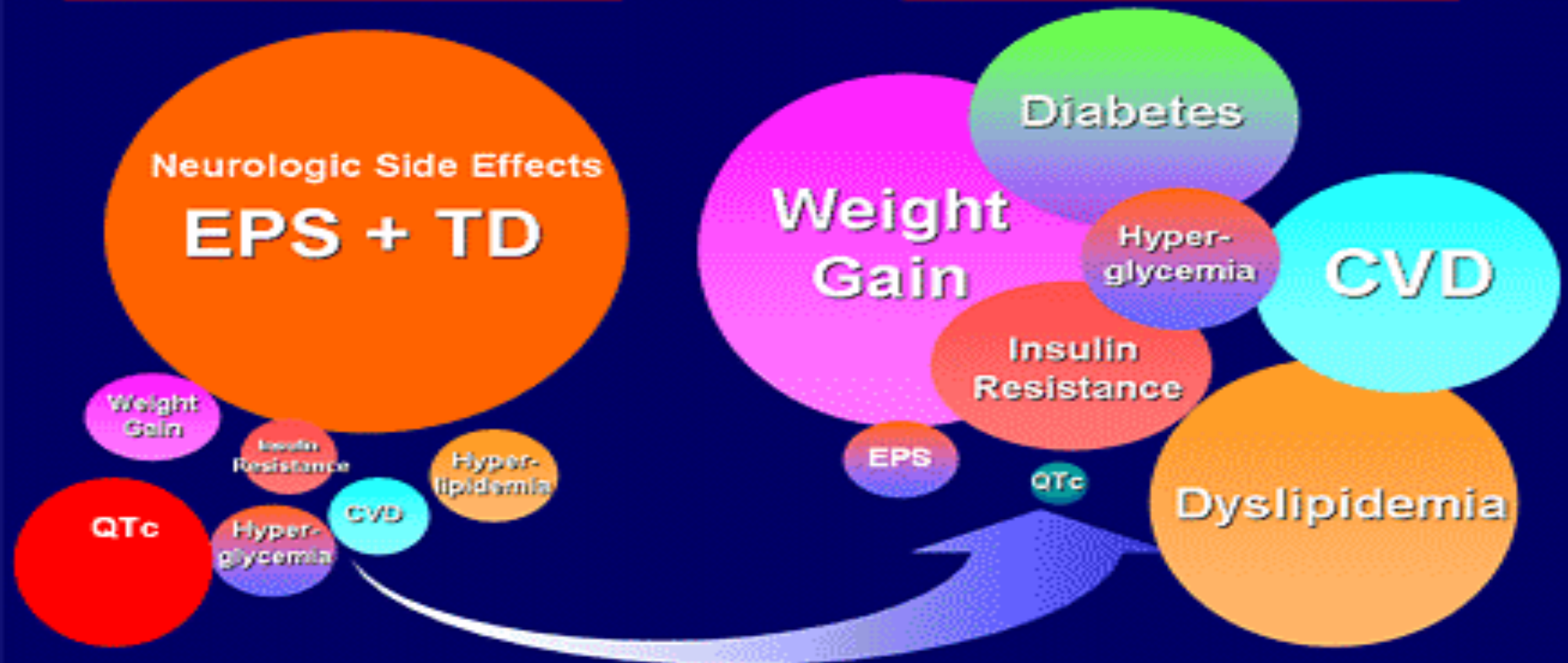
Insulin Resistance

EPS

QTc

CVD

Dyslipidemia



Metabolic effects of atypical antipsychotics

ADA Consensus on Antipsychotic Drugs: Metabolic Abnormalities of Second-Generation Antipsychotics

Drug	Weight Gain	Risk for Diabetes	Worsening Lipid Profile
Clozapine	+++	+	+
Olanzapine	+++	+	+
Risperidone	++	D	D
Quetiapine	++	D	D
Aripiprazole*	+/-	-	-
Ziprasidone*	+/-	-	-

+ = increased effect; - = no effect; D = discrepant results.
*Newer drugs with limited long-term data.

Thank you

Any question?

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