

PHARMACOLOGY TEAM

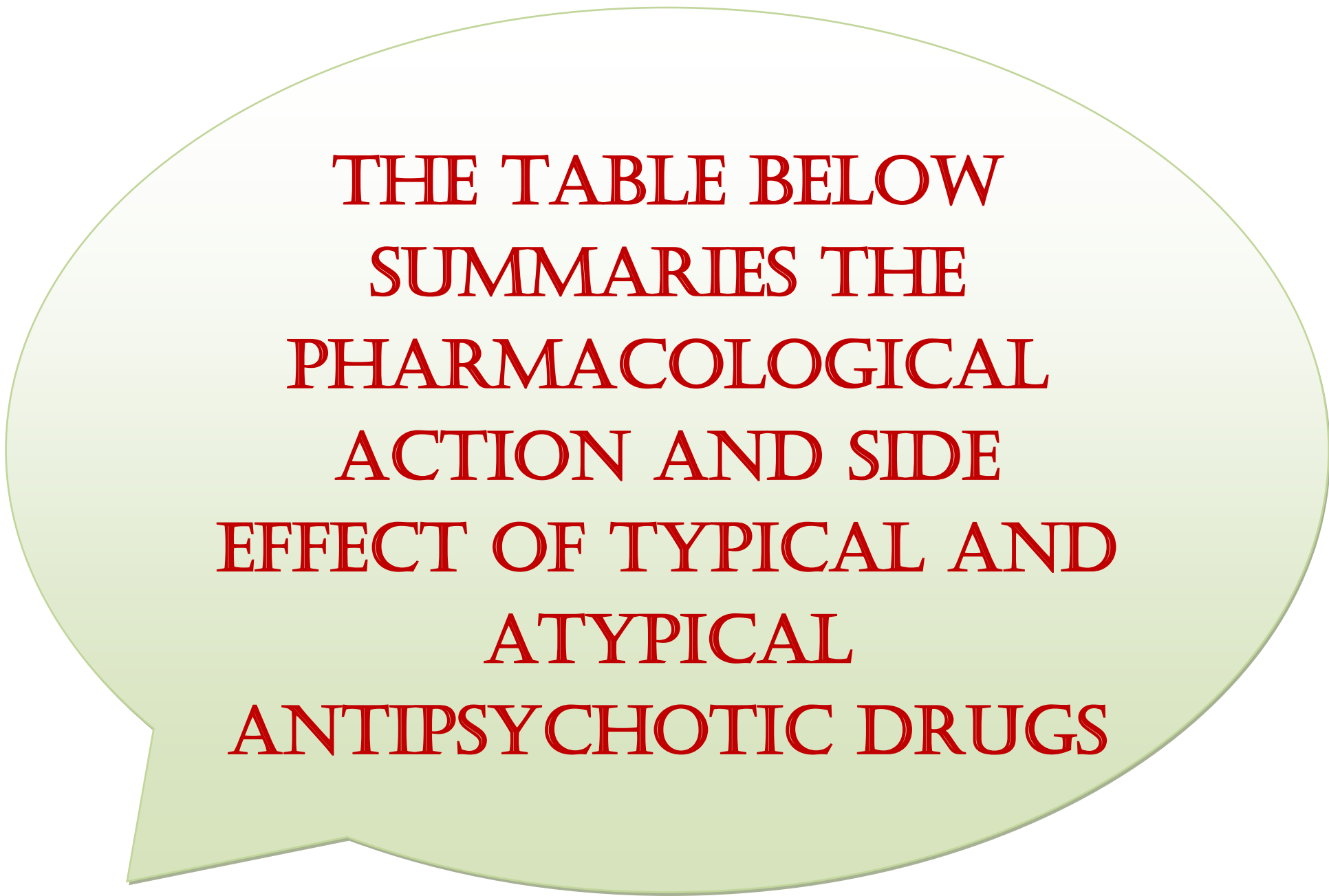


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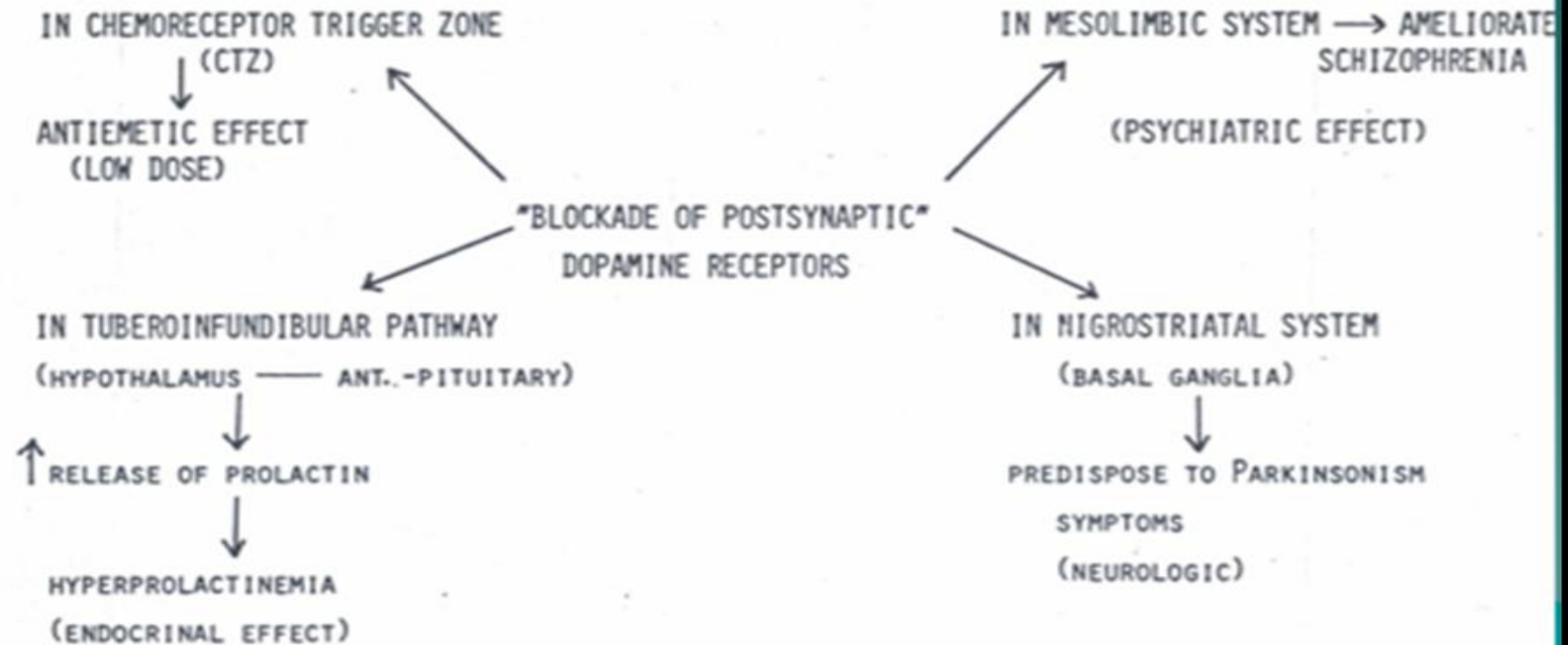
THE TABLE BELOW
SUMMARIES THE
PHARMACOLOGICAL
ACTION AND SIDE
EFFECT OF TYPICAL AND
ATYPICAL
ANTIPSYCHOTIC DRUGS

System	Pharmacological action	Mechanism	Adverse effect
C N S	Antipsychotic effect <ul style="list-style-type: none"> ❖ Produce emotional quieting ❖ psychomotor slowing ❖ Decreases hallucinations 	Blockade of dopamine receptors in the mesolimbic system .	Sedation, drowsiness, fatigue
	Extrapyramidal Symptoms	Blockade of dopamine receptors in the nigrostriatum	(Abnormal involuntary movements such as tremors, parkinsonism & tardive dyskinesia.) early in treatment : Tremor late - occurring : Tardive Dyskinesia , Neuroleptic Malignant Syndrome , Parkinson
	Endocrine effects	Prevent dopamine inhibition of prolactin release from pituitary → Hyperprolactinemia	- Gynecomastia - Galactorrhoea - Amenorrhoea - impotence
	Metabolic effects	Blockade of dopamine receptors in the medullary – periventricular pathway	(Changes in eating behavior and weight gain)
	Anti-emetic effect (Effective against drug & disease- induced vomiting not- motion sickness)	Blockade of dopamine receptors in the CRTZ of the medulla	

ANS	Anticholinergic Effects	Blockade of muscarinic receptors	<ul style="list-style-type: none"> - Blurred vision- - Dry mouth - Urinary retention - Constipation
	Antiadrenergic Effects	Blockade of α- adrenergic receptors	<ul style="list-style-type: none"> - Postural hypotension- - Impotence - Failure of ejaculation
histamine	Antihistaminic effect	H1 receptor blockade	Sedation,
Other Actions	lowering of body temperature	Heat loss as a result of vasodilation (α- blocking) Or due to central effect	
	ECG changes	-Prolongation of QT interval -Abnormal configuration of ST- segment & T wave	
Other side effect			<ul style="list-style-type: none"> • Miscellaneous Effects <ul style="list-style-type: none"> - Obstrucive jaundice - Granular deposits in cornea - Retinal deposits - Weight gain - Agranulocytosis - Seizures

For understanding

EFFECTS ON DOPAMINERGIC SYNAPSES



THE SAME PHARMACODYNAMIC ACTION MAY HAVE DISTINCT PSYCHIATRIC "NEUROLOGIC" AND ENDOCRINE EFFECTS.

Typical Antipsychotics	Atypical Antipsychotics
Treat +ve symptoms	Treat +ve & -ve symptoms
Block only dopaminergic receptors	Block both dopaminergic & serotonergic receptors.
Not effective in refractory schizophrenia	Effective in refractory cases of schizophrenia
Extrapyramidal side effects	No or few extrapyramidal side effects

! positive Symptoms :

- ▶ **Hallucinations** (الهلوسة)
- ▶ **Delusions** (أوهام)
- ▶ **Paranoia**

! Negative Symptoms :

- ▶ **Social withdrawal** (lack of contact with people)
- ▶ **Anhedonia** (absence of pleasure)
- ▶ **Emotional blunting** (suppression of emotions)

Atypical Antipsychotic Drugs: Are now considered to be first line treatments for schizophrenia

Drugs	Receptors	Adverse effects
Dibenzodiazepines: Clozapine	D4 & 5HT ₂	1_agranulocytosis (absence of WBC) 2_seizures 3_myocarditis 4_excessive salivation (during sleep)
Benzisoxazoles: Risperidone	D ₂ & 5HT ₂	1_QT prolongation (contraindicated in patients with long QT interval) 2_postural hypotension 3_weight gain
Thienobenzodiazepines: Olanzapine	D ₁ ..D ₄ & 5HT ₂	1_weight gain 2_joint stiffness & twitching 3_dental pain & flu syndrome 4_sedation 5_flatulence ..increased salivation & thirst 6_postural hypotension
Dibenzothiazepines: Quetiapine	D ₁ ..D ₂ & 5HT ₂	1_hyperglycemia 2_hypotension 3_leukopenia/neutropenia 4_sedation

Typical Antipsychotic Drugs:

1-Phenothiazine derivatives : **Chlorpromazine** + **Thioridazine**

2- Butyrophenones : **Haloperidol**

3- Thioxanthene : **Thiothixene**

