

Drug	Mechanism of action	Pharmacokinetics	Pharmacological Actions	Uses	Side Effects	Interaction & Precaution
1-Benzodiazepines Classification : -Short action (3-8 h): triazolam , oxazepam -Intermediate action (10-20h): alprazolam , estazolam, lorazepam, temazepam - Long action (1-3 days): clorazepate, chlordiazepoxide, diazepam, flurazepam, Quazepam	Benzodiazepines act by binding to BZ receptors in the brain →enhance GABA action on brain → chloride channels opening → ↑ chloride influx to the cell → hyper- polarization →inhibition of brain.	<ul style="list-style-type: none"> are lipid soluble well absorbed orally, can be given parenterally <u>Chlordiazepoxide-Diazepam (IV only NOT IM)</u> widely distributed. cross placental barrier (Fetal depression). excreted in milk (neonatal depression). metabolized in the liver to active metabolites (long duration of action-cumulative effect). Redistribution from CNS to skeletal muscles, adipose tissue) (termination of action). 	<ul style="list-style-type: none"> Anxiolytic action. Depression of cognitive and psychomotor function Sedative & hypnotic actions Anterograde amnesia. Minimal depressant effects of CVS and respiratory system Some have anticonvulsant effect: (clonazepam, diazepam) 	<ul style="list-style-type: none"> Anxiety disorders: All types of anxiety *short term relief of <u>severe</u> anxiety *General anxiety disorder *OCD *Phobia *Panic attack with depression Alprazolam (antidepressant effect) Sleep disorders (Insomnia) : Triazolam, Lorazepam, Flurazepam Treatment of epilepsy: Diazepam – Lorazepam In anesthesia <u>Preanesthetic medication (diazepam).</u> <u>Induction of anesthesia (Midazolam, IV)</u> 	<ul style="list-style-type: none"> Ataxia (motor incoordination) Cognitive impairment. Hangover: (drowsiness, confusion) Tolerance & dependence <u>Risk of withdrawal symptoms :</u> <u>Rebound Insomnia, anorexia, anxiety, agitation, tremors and convulsion.</u> Toxic effects: respiratory & CVS depression in large doses. 	Drug-Drug interactions: CNS depressants : Alcohol & Antihistaminics increase effect of benzodiazepines -Cytochrome P450 (CYT P450) Inhibitors : Cimetidine & Erythromycin Increase $t_{1/2}$ of benzodiazepines CYT P450 inducers Phenytoin & Rifampicin Decrease $t_{1/2}$ of benzodiazepines ----- Dose should be reduced in <ul style="list-style-type: none"> Liver disease Old people. Precautions Should not be used in -pregnant women or breast-feeding. -People over 65.
2-Buspirone * Disadvantages	5HT _{1A} agonists	<ul style="list-style-type: none"> acts as agonist at brain 5HT_{1A} receptors rapidly absorbed orally. Slow onset of action (delayed effect) $T_{1/2}$: (2 – 4 h). Slow onset of action (delayed effect) 	-Only anxiolytic - No hypnotic effect. - Not muscle relaxant. - Not anticonvulsant. -No potentiation of other CNS depressants. - Minimal psychomotor and cognitive dysfunctions. - Does not affect driving skills. -Minimal risk of dependence. - No withdrawal signs.	in mild anxiety & generalized anxiety disorders. Not effective in severe anxiety/panic disorder	GIT upset, dizziness, drowsiness	Drug Interactions with CYT P450 inducers and inhibitors
3-Beta Blockers : Propranolol – atenolol	act by blocking peripheral sympathetic system		-Reduce somatic symptoms of anxiety -Decrease BP & slow HR	-Used in performance anxiety. - are less effective for other forms of anxiety		should be used with caution: asthma,cardiac failure, peripheral vascular disorders

Antidepressant Drugs				
Drug	MOA	Pharmacokinetics	Uses	Side Effects
1-Tricyclic Antidepressants: Doxepin-imipramine	act by reducing uptake of 5HT & NE	Delayed onset of action (weeks).	<ul style="list-style-type: none"> Used for anxiety especially associated with depression. Effective for panic attacks 	<ul style="list-style-type: none"> Atropine like actions (dry mouth-blurred vision, tachycardia). α-blocking activity (Postural hypotension). Sexual dysfunction. Weight gain.
2-Selective serotonin reuptake inhibitors (SSRIs) : Fluoxetine	acts by blocking uptake of 5HT	<ul style="list-style-type: none"> Orally Delayed onset of action (weeks). Long half life 	Used for panic disorder – OCD depression- Generalized anxiety disorders - phobia.	<ul style="list-style-type: none"> Nausea, diarrhea Weight gain Sexual dysfunction Dry mouth Seizures Sleep disturbance
3-Monoamine oxidase inhibitors (MAOIs) : Phenelzine	act by blocking the action of MAO enzymes	<ul style="list-style-type: none"> Require dietary restriction Avoid wine, beer, fermented foods as old cheese that contain tyramine. 	Used for panic attacks and phobia	<ul style="list-style-type: none"> Dry mouth Constipation, Diarrhea, Restlessness Dizziness.