

PHARMAELITE – Writing the SUCCESSFUL STORIES!!

PHARMACOLOGY

SR. NO.	TOPIC	PAGE NO.
01	OPIOIDS	2
02	ANTI HYPERTENSIVE	5
03	ANTI ANGINAL	11
04	ANTI ARRHYTHMIC	13

Regards,

Team PHARMAELITE

+91-8433830815 / +91-8692820106 / +91-8828142942

Follow us on :

<https://www.pharmaelite17.com>

<https://www.instagram.com/pharmaelite17/>

<https://www.facebook.com/pharmaelite17>

<https://www.youtube.com/dharmeshmehta>

<https://www.linkedin.com/in/pharmaelite17-academy/>

PHARMAELITE – Writing the SUCCESSFUL STORIES!! PHARMACOLOGY

OPIOIDS

SOURCE - *Papaver somniferum* (poppy plant)

PROTOTYPE - Morphine (agonistic activity on μ , κ and δ receptors)

ACTIONS / ADVERSE EFFECTS MEDIATED BY OPIOID RECEPTORS

μ	κ	δ
Sedation (Less With Pethidine & Fentanyl)	Dysphoria (Psychomimetic Effects)	Spinal Analgesia
Constipation (Decreased Motility & Increased Git) (Devoid By Dextromethorphan)		Modulation Of Hormone
Analgesia	Analgesia	Neurotransmitter Release
Respiratory Depression	-	-
Cough Suppression	-	-
Truncal Rigidity (With Fentanyl, Alfentanyl & Sufentanil)	-	-
Euphoria (Dependence)	-	-
Miosis (With Morphine)	-	-

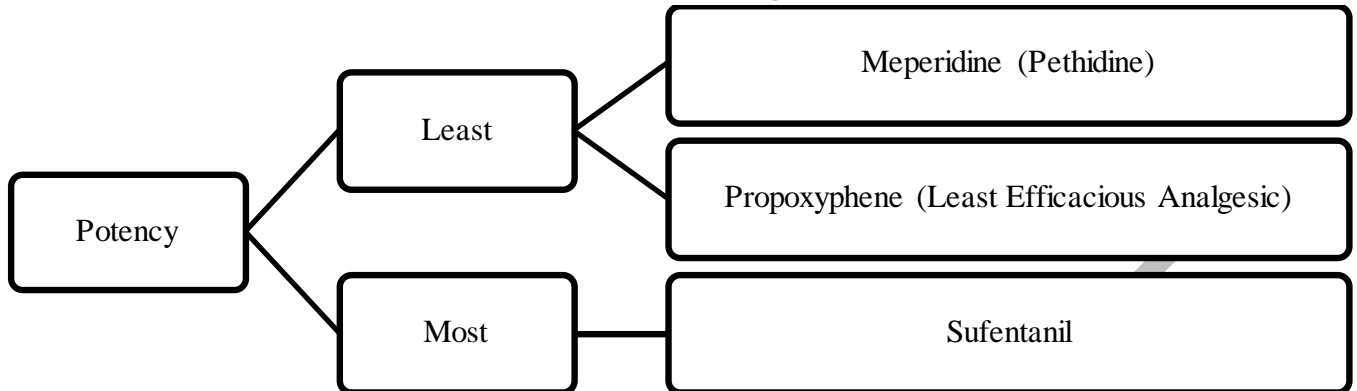
Other Adverse Effects - Nausea, Vomiting, Itching, Convulsions

Withdrawal Syndrome Symptoms - Rhinorrhoea, Lacrimation, Yawning, Chills, Mydriasis, Vomiting, Diarrhoea & Anxiety

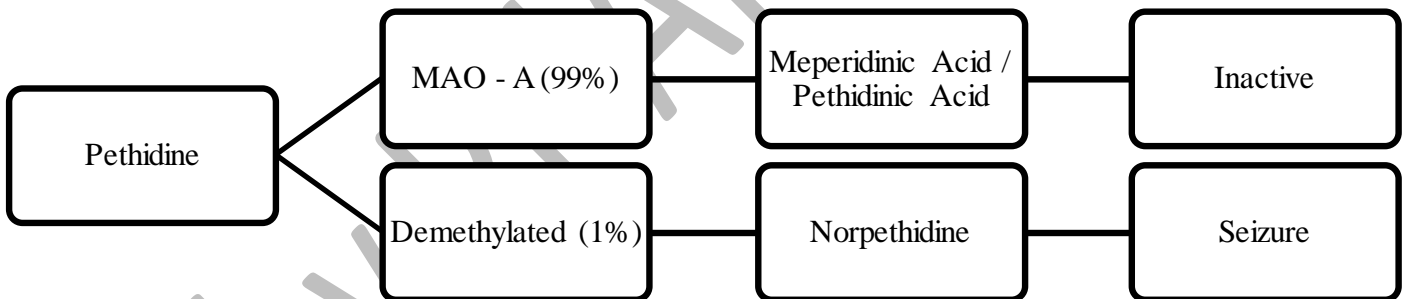
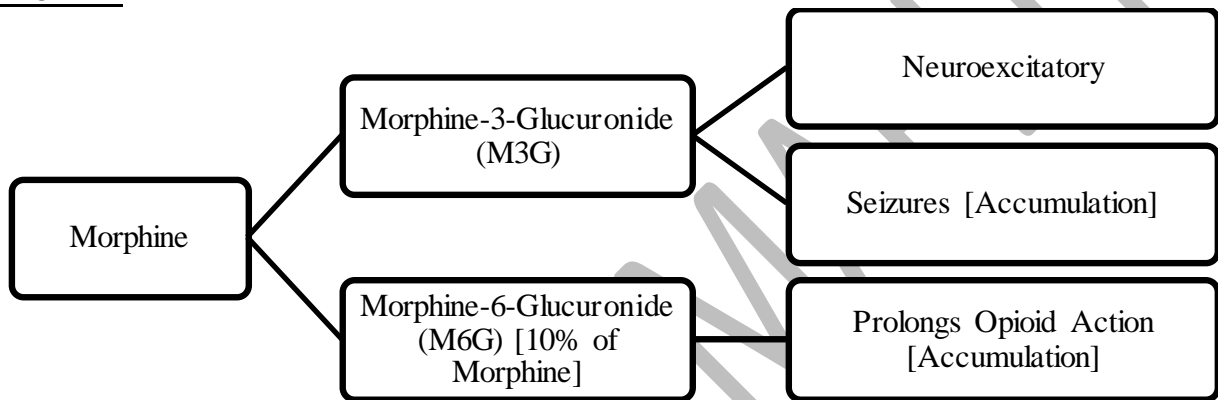
ENDOGENOUS PEPTIDE	MAJOR ACTION ON RECEPTORS	ACTION
Endorphin	μ	Analgesic Effects
Dynorphin	κ	
Enkephalins	δ	
Nociception (New)	Nociceptin / Orphanin FQ (N/OFQ) or Orphanin like receptors (ORL1)	

POTENCY

PHARMAELITE – Writing the SUCCESSFUL STORIES!!



METABOLITE



ACTIONS OF PURE OPIOIDS

Analgesic Agents - Visceral, dull & constant pain is relieved more effectively than inflammatory pain.

Pure Agonists - Morphine, Methadone, Pethidine, Levorphanol, Codeine, Hydrocodone, Oxycodone & Propoxyphene.

DRUG	EFFECT	ACTION
Morphine	Central Nervous System	Spinal & Supraspinal Analgesia
Pethidine & Pentazocine	Peripheral	Increase Heart Rate
Alvimopan	Peripheral	Antagonist for Paralytic Ileus

CLINICAL USE

Content in this booklet is copyrighted by PHARMAELITE

PHARMAELITE – Writing the SUCCESSFUL STORIES!!

DRUG	CLINICAL USE
Morphine	Myocardial Infarction Acute Pulmonary Edema Pre-Anaesthetic Medication
Codeine, Pholcodeine, Dextromethorphan & Noscapine	Cough Suppressants
Loperamide & Diphenoxylate	Non-Infective Diarrhoea
Fentanyl, Alfentanil, Sufentanil (All Are Highly Lipid Soluble)	Adjuncts To Other Anaesthetic Agents
Pethidine	Reduce Shivering After Anaesthesia [By Its Action On A2 Receptor]
Diphenoxylate, Difenoxin (Active Metabolite) & Loperamide	Diarrhoea
Ziconotide	Intrathecal Analgesia (Blocks Voltage-Gated N Type Ca ²⁺ Channels)

ROUTES OF ADMINISTRATION

DRUG	ROUTES OF ADMINISTRATION
Morphine	Oral, Rectal, I.V., I.M., Intrathecal or Epidural
Fentanyl	Transdermal Patch, Buccal Transmucosal
Butorphanol	Nasal
Methadone	Oral, I.V., S.C. or Rectal

CONTRACT INDICATION

OPIOIDS SIDE EFFECT	ACTION	CONTRACT INDICATED IN
Increase Intrabiliary Pressure	Constricting Biliary Smooth Muscle	Biliary Colic
Aggravate Bronchoconstriction	Releasing Histamine	Asthmatics
Seizures	Used for Prolonged Periods	Renal Failure
Increases Intracranial Tension (Morphine)	Retention of CO ₂ (Due to Respiratory Depression)	Head Injury
Exaggerated Response to Opioids		Hypothyroidism
In-Utero Physical Dependence of Fetus & Severe Withdrawal Symptoms May Be Precipitated After Birth		Pregnancy
Tachycardia (Pethidine And Pentazocine)	Anticholinergic Activity	Myocardial Infarction

CAUTION - In infants, elderly and patients with pulmonary, hepatic or renal dysfunction.

MIXED AGONISTS-ANTAGONISTS

DRUG	RECEPTOR	ACTION
Buprenorphine	Partial Agonist at μ Antagonist at κ	Analgesic & alternative to methadone for the management of opioid withdrawal. Dissociates slowly from μ receptors & is thus resistant to

Content in this booklet is copyrighted by PHARMAELITE

PHARMAELITE – Writing the SUCCESSFUL STORIES!!

	& δ	naloxone reversal.
Nalbuphine, Pentazocine & Dezocine	κ Agonists μ Antagonists	Psychomimetic effects with hallucinations, nightmares & anxiety.
Butorphanol	κ Agonist	Analgesia but more sedation than morphine.

OPIOID ANTAGONISTS

DRUG	RECEPTOR	TIME	ROUTE	USE
Naloxone	potent μ antagonists with significant blocking action at κ & δ receptors	Very Short Acting	Parenterally (Ineffective Orally)	Acute Opioid Poisoning Neonatal Resuscitation
Naltrexone		Longer Half Life	Parenterally	Maintenance Drug for Opioid Poisoning Prevent Relapse after Opioid De- Addition Decrease Craving in Chronic Alcoholics
Nalmefene		Long Acting	Orally	Treatment of Obesity (Along with Bupropion)
Alvimopan & Methylnaltrexone	Peripheral Opioid Antagonists	-	-	Opioid Induced Constipation
Naloxegol (New)		-	-	

OPIOID DE-ADDICTION

DURATION	DOSE	THERAPY	WITHDRAWAL SYMPTOMS	DRUG
Short	Small	Sudden Stop	Mild	β -blockers or Clonidine or Lofexidine
Long	Large	Sudden Stop	Severe	Methadone

OPIOID POISONING

Diagnosed by - Pin Point Pupil

Naltrexone - Maintenance Therapy in Opioid Poisoning, Used to Prevent Relapse, Blocking μ Receptors

IMPORTANT POINTS

DRUG	POINT
Morphine, Hydromorphone & Oxymorphone	Strong opioid agonists
Levorphanol	Similar to morphine in its actions
Heroin (Diacetylmorphine)	Potent and fast acting opioid but carries high risk of abuse potential
Methadone	Long acting opioid analgesic Blocks N-methyl-D-aspartate (NMDA) receptors and reuptake of monoamines Long $t_{1/2}$ so development of dependence and tolerance is very slow Treatment of opioid abuse

Content in this booklet is copyrighted by PHARMAELITE

PHARMAELITE – Writing the SUCCESSFUL STORIES!!

	Opioid rotation therapy
Pethidine & Pentazocine	Anticholinergic activity (can result in tachycardia)
Nalbuphine	Ceiling effect to its respiratory depressant action
Tramadol	Weak μ receptor agonist Inhibits reuptake of NA and 5-HT
Tapentadol	μ receptor agonistic NA reuptake inhibiting action

Regards,

Team PHARMAELITE

+91-8433830815 / +91-8692820106 / +91-8828142942

Follow us on :

<https://www.pharmaelite17.com>

<https://www.instagram.com/pharmaelite17/>

<https://www.facebook.com/pharmaelite17>

<https://www.youtube.com/dharmeshmehta>

<https://www.linkedin.com/in/pharmaelite17-academy/>