

NARCOTIC ANALGESICS

Q. Define analgesics?

Analgesics are the drugs which relieve or suppress the sensation of pain by acting on CNS but without producing any degree of loss of consciousness.

Q. Classify narcotic analgesics with example?

Classification of narcotic analgesics is as follows:

a) Natural opium alkaloids

i) Phenanthrin group of alkaloids : e.g. Morphine , Codeine, Thebaine.

ii) Benzyl isoquinoline group alkaloids: e.g. Papavarine, Noscapine, Narceine.

b) Semisynthetic derivatives of opium alkaloids: e.g. Heroine

c) Synthetic morphine substitutes: e.g. Pethidine, Methadone.

Q. Morphine causes addiction ,why?

- Because morphine relieves severe type of pain like burns , fractures etc.
- When morphine is administered in absence of pain it produce euphoria.
- To experience of euphoria again and again individual develops habit.
- Tolerance to morphine is developed in the individual which results in tendency to increase the dose to get the required euphoria.

- **Q. Nalorphine is used in morphine poisoning, why?**
- Nalorphine is a rapid acting drug, given parenterally to prevent the effect of morphine poisoning.
- It reverses respiratory depressant, sedative, hypotensive, analgesic, psychotomimetic effects of morphine.
- In the absence of morphine, it exhibits no pharmacologic activity.
- Thus, nalorphine acts as antagonist of morphine.

- Morphine is strictly contraindicated in children, old people and carrying women?
- Because, morphine if administered in children, may decrease the rate of respiration because the system in children is not properly developed to detoxify the drug.
- In old people morphine causes respiratory depression, bronchospasm, asthma.
- In carrying women morphine may cross the placental barrier and depress the foetal respiration.

Q. Give difference between morphine and pethidine?

MORPHINE	PETHIDINE
1. Absorption on oral administration is unpredictable. Administered by S/c route.	1. Well absorbed on oral administration. Not administered by S/c route.
2. Potent analgesic and narcotic.	2. Less potent analgesic.
3. Spasmogenic.	3. Spasmolytic.
4. Depress cough centre.	4. Not depress cough centre.
5. Constrict pupil.	5. No effect.
6. Not useful to relieve labour pains.	6. Useful in labour pains.

Q. Pharmacological effect of morphine on a) CNS b)GIT c) Smooth muscle d) CVS?

Pharmacological actions of morphine :

a) Action on CNS : Morphine has biphasic action on CNS . It depresses cerebrum and on medulla both depression and stimulation.

Morphine by its depressant action on CNS abolishes all types of pains without affecting sensations such as hearing ,etc. It is most effective in visceral pain. Morphine depresses respiratory centre in medulla oblongata , resulting in decreased pulmonary ventilation . It depresses emetic centre in medulla making vomiting a difficult act. It depresses heat regulating centre in hypothalamus and causes lowering of body temperature.

Morphine stimulate chemoreceptor trigger zone in medulla oblongata. It stimulates vagal medullary centre causing slower pulse.

b) Action on GIT : Morphine has spasmogenic action on smooth muscles of GIT . It causes constriction of sphincters. It leads to decrease in peristaltic movement and stagnation of intestinal contents. Morphine also reduces sensitivity of defaecation reflex. This leads to constipation.

- c) Smooth muscles : Morphine increases tone of smooth muscles. So there is constriction of bronchial bladder muscles. It leads to urine retention.
- d) Effect on CVS : Morphine causes vasodilation and fall in B.P. The vasodilation is due to central vasomotor depression.

Q. What is acute morphine poisoning? Give its treatment ?

It occurs from clinical overdose or from suicidal intention. It is characterised by respiratory depression , cold skin , pin point pupil , hypotension , shock , coma , death. Death is due to respiratory depression.

Treatment:

Two major lines of treatment are the administration of specific antagonist ; Naloxone and Gastric lavage. Naloxone 0.4 mg IV repeated every 2-3 minutes till narcotic reversal is achieved . Gastric lavage is useful to wash out ingested drug and even when injected as it may be excreted in stomach. Administration of IV fluids and maintenance of adequate urine output.

Q. Write therapeutic uses of morphine and codeine?

Ans.: Uses of morphine:

- 1) It is used for relief of all types of pain.
- 2) As a preanaesthetic medication.
- 3) As a sedative.
- 4) In acute left ventricular failure.
- 5) To achieve symptomatic relief from severe diarrhoea.

Uses of codeine :

It is mainly used as a antitussive , mild analgesic and an antidiarrhoeal drug.