Narcotic Analgesics

- Analgesics are drugs which relieve or suppress the sensation of pain without producing any degree of loss of consciousness

- **Narcotic analgesics** are the drugs, which possess the ability of depressing the central nervous system and produces hypnotic and sedative action and relieve pain

Classification of Narcotic Analgesics

I. Natural opium alkaloids

II. Semi synthetic alkaloids

III. Synthetic morphine substitutes

Natural Opium Alkaloids

I. Phenanthrene group of alkaloids

E g: Morphine

Codeine

II. Benzyl isoquinoline group of alkaloids

Papaverine,

Noscapine and

Narceine

(don’t have analgesic action)

Morphine (Narcotic Analgesic)

- Available as Morphine Sulphate or
- Morphine Hydrochloride

Pharmacology (Morphine)
Main action is abolition of reaction to pain (Psychological component of pain)

- Action on CNS
- Action on GIT
- Smooth muscle
- Effect on CVS

Action on CNS

This impairs the perception of pain

- Thalamus – Raises the pain threshold and depression
- Medulla – Both depression and stimulation

C N S Depressant Action

a. CNS depressant action

- On CNS abolishes all types of severities of pain without affecting other sensations such as touch and hearing.
- It relieves mainly **dull constant pain** rather than **sharp intermittent pain**
- It is most effective for visceral pain
- Mood elevation (Euphoriant) action of morphine in patients suffering from pain further decreases effective reactions to pain.

Morphine

b. Respiratory centre depressed in medullaoblongata resulting in decreased pulmonary ventilation

- It also depresses a centre regulating cough reflex in medulla and thus acts as antitussive
- It depresses emetic centre in medulla making vomiting a difficult act
- Depresses heat regulating centre in hypothalamus and causes lowering of body temperature

Morphine

Action on GIT

- Constriction of sphincters
- Decrease in peristaltic movement
- Stagnation of contents in colon
- Maximum absorption of water and drying of fecal matter
- Reduces sensitivity of defecation reflex
- Constipation (This effect is useful in the treatment of diarrhoea

Morphine

On Smooth Muscles

- Tone of smooth muscles increased
- Constriction of bronchial and bladder muscles
- Constriction of internal bladder sphincter and leads to urine retention
- Constriction of pupil (miosis)
- **Effects on CVS** : Vasodilation and fall in B.P.

Absorption Fate and Excretion

- Upon oral administration the drug is absorbed but absorption is unpredictable.
- Sub cutaneous sites
- I. M.

} Even and quick

- It is metabolized in liver and excreted in urine.

Adverse Effects

- constipation
- Nausea
- vomiting
- Miosis (pin point pupil)
- light headedness,
- Dizziness and sweating.

Tolerance and Addiction

- In repeated administration tolerance can be developed to respiratory depressant action
- Addiction develops
- Withdrawal symptoms are severe and even fatal
- The symptom may leads to Cardio Vascular Collapse

Acute Morphine Poisoning

- Clinical over dosage or suicidal intention

The symptoms of poisoning are

- Respiratory depression
- Cold Skin
- Pin Point Pupils (miosis)
- Hypotension
- Shock
- Coma and death (Respiratory depression)

Treatment of Morphine Poisoning

- Naloxone 0.4 mg IV repeated every 2-3 minutes
- Gastric lavage
- The supportive treatment
- Maintenance of respiration by artificial means
- Administration of IV fluids (5% dextrose) and maintenance of adequate urine output

Therapeutic Uses

- It is used to relieve all types of pain especially the Visceral pain
- As a preanaesthetic medication
- Sedative (induces sleep)
- Left ventricular failure
- Tincture of opium is used to achieve relief from severe diarrhoea (0.3ml oral)

Preparations and Doses

Powdered opium: I.P - 60 to 200 mg orally

Tincture opium: I.P. - 0.3 to 2 ml orally

Morphine hydrochloride Tab: I.P. - 8 to 20 mg orally

Morphine Hydrochloride Inj - 8 to 20 mg S.C. or I.M. inj