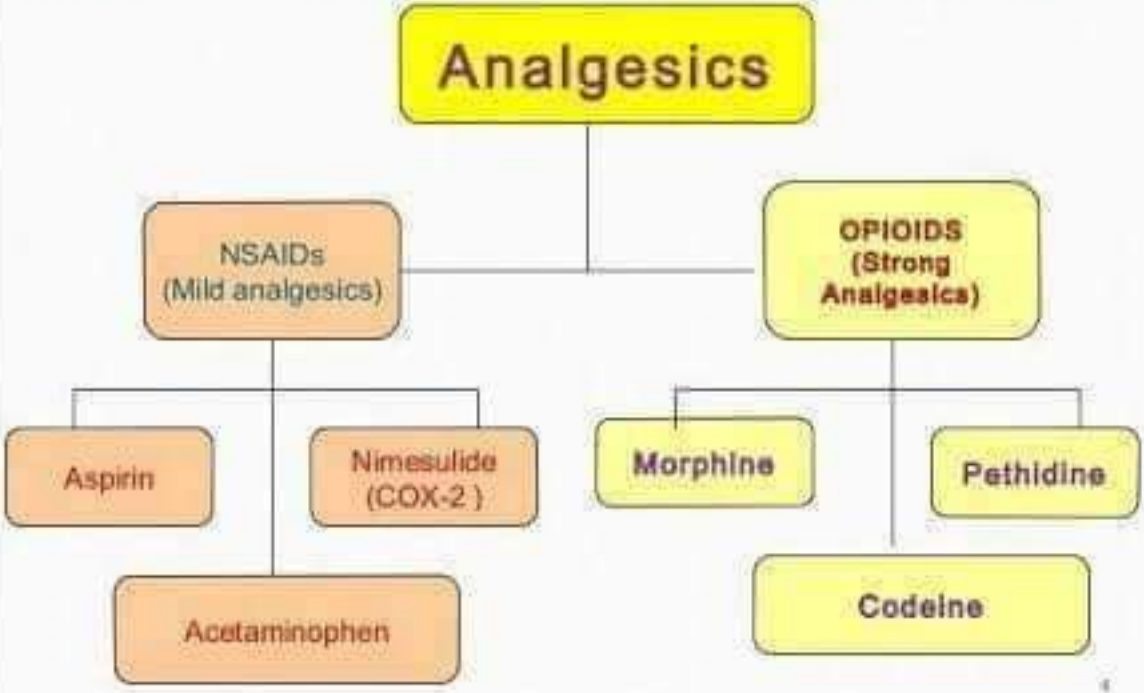
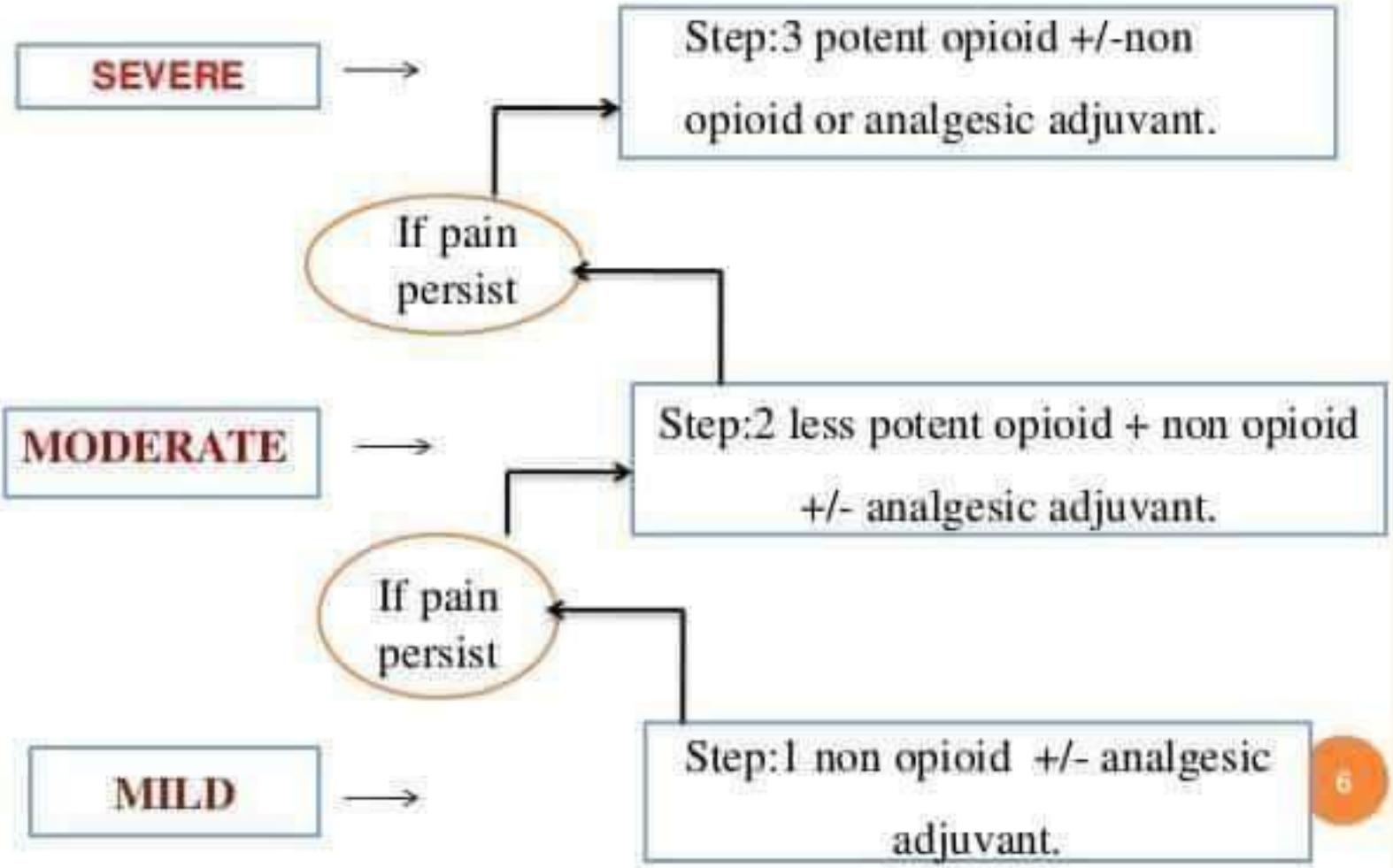
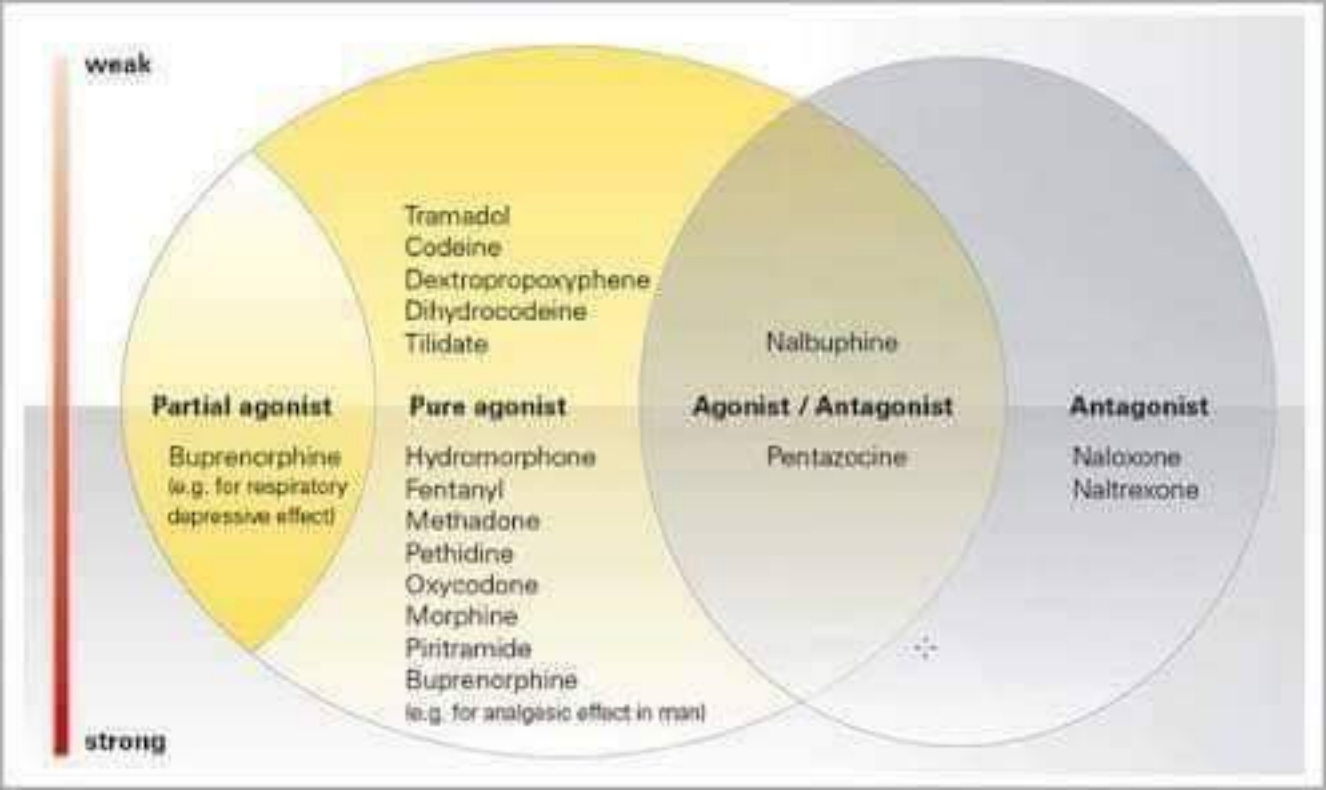
Classification of Analgesics



PAIN MANAGEMENT




weak
Tramadol
Codeine
Dextropropoxyphene
Dihydrocodeine
Tilidate
Nalbuphine
Partial agonist
Pure agonist
Agonist / Antagonist
Antagonist
Buprenorphine
(e.g. for respiratory depressive effect)
Hydromorphone
Fentanyl
Methadone
Pethidine
Oxycodone
Morphine
Piritramide
Buprenorphine
(e.g. for analgesic effect in mani
Pentazocine
Naloxone
Naltrexone
strong

Classification of OPIOIDS

- **Natural**
  - **phenanthrene**
    - morphine 10%
    - codeine 0.5%
    - thebaine 0.2%
- **semisynthetic**
  - heroin
  - oxymorphone
  - Hydromorphone
- **synthetic**
  - Phenylpiperidines (meperidine –fenatnyl)
  - Phenylheptylamines (methadone – levomethadyl)
  - morphinians (Levorphanol)
  - benzamorphans (pentazocine – dezocine)

NON-OPIOID ANALGESICS

1. Para-Aminophenol Compounds
   - *Paracetamol (Acetaminophen, Panadol)*
   - *Phenacetin*
2. Salicylates – Salicylic Acid Compounds
   - *Acetylsalicylic Acid (Aspirin)*
   - *Sodium Salicylate*
3. Pyrazolone Compounds
   - *Analgin (Metamizole)*
   - *Butadione (Phenylbutazone)*

Effects of Opium

1. Dwelling pain
2. Euphoria and detachment from anxieties of existence
3. Crude opium becomes more valuable when convert into morphine and heroine which in many times more potent than opium itself.
4. Induce sleep.
5. Anxiety and depressions

SIDE EFFECTS OF OPIUM

- Malnutrition
- Respiratory complications
- Low blood pressure
- Mental/physical health problems
- Severe constipation

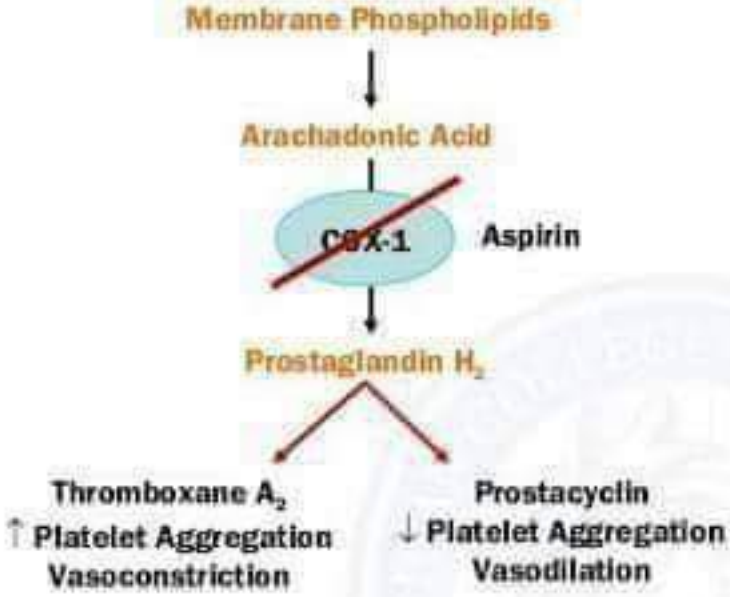
Uses of Codeine

- Approved indications for codeine include:
- ·Cough, though its efficacy in low dose over the counter formulations has been disputed.
- Diarrhea
- Moderate to severe pain·Irritable bowel syndrome
- Codeine is sometimes marketed in combination preparations with paracetamol (acetaminophen) as co-codamol (best known in North America as Tylenol 3), with aspirin as co-codaprin or with ibuprofen. These combinations provide greater pain relief than either agent (drug synergy; see synergy).

aspirin

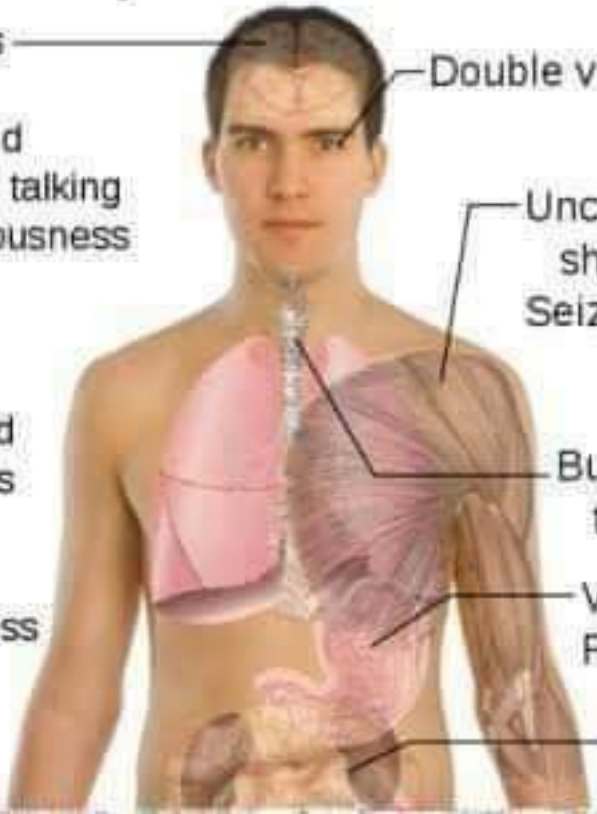
advantage	disadvantage
• reduces fever more effectively – antipyretic (=drug which reduces fever) • also useful in preventing the recurrence of heart attacks and strokes and also thins the blood (beneficial side-effects) and reduces blood clotting • also anti-inflammatory – reduces inflammation or swelling	• ulceration • stomach bleeding due to its acidic properties • allergic reactions • Reye's syndrome in children (a potentially fatal liver and brain disorder) - not so suitable for children (baby aspirin is available)

Aspirin: Mechanism of Action



Symptoms of

Aspirin overdose



Restlessness
Irritability
Excessive and unorganized talking
Fear or nervousness
Dizziness
Confusion
Abnormally excited mood
Hallucinations
Drowsiness
Loss of consciousness

Double vision

Uncontrollable shaking
Seizures

Burning throat pain

Vomiting
Pain

Systemic:
Fever

Decreased urination

Salicylates---Aspirin

[Pharmacological Effects and **clinical Uses**]

- **1. Analgesic Effects:**

☆ Aspirin is most effective in reducing pain of mild to moderate intensity (headache, toothache,dysmenorrhea<痛经> , arthralgia,etc).

☆ It is not effective for severe visceral pain, e.g. myocardial infarction or renal or biliary colic.

☆ It acts peripherally through its effects on inflammation but probably also inhibits pain stimuli at a subcortical site.

Uses of Aspirin

- As analgesic (300 to 600 mg during 6 to 8 h) for headache, backache, pulled muscle, toothache, neuralgias.
- As antipyretic in fever of any origin in the same doses as for analglesia. However, *paracetamol and metamizole are safer*, and generally preferred.
- Acute rheumatic fever. *Aspirin is the first drug of choice. Other drugs substitute Aspirin only when it fails or in severe cases.* Antirheumatic doses are 75 to 100 mg/kg/24 h (resp. 4–6 g daily) in the first weeks.
- Rheumatoid arthritis. Aspirin a dose of 3 to 5 g/24 h *after meal* is effective in most cases. Since large doses of Aspirin are poorly tolerated for a long time, the new NSAIDs (diclofenac, ibuprofen, etc.) in depot form are preferred.

Aspirin

- Used for relief, particularly where there is inflammation involved, such as arthritic pain and dental pain.
- Also used in preventing blood clotting and relieving fever.
- Active ingredient : acetylsalicylic acid
- Acidic in nature.
- Side effects:

- Can cause bleeding in the stomach as aspirin is very acidic.
- Can cause allergic reactions, skin rashes and asthmatic attacks.
- Can cause brain & liver damage to chlidren with flu / chicken pox. (Never be given to children)
- Can cause ulcers & internal bleeding.

PARACETAMOL / ACETAMINOPHEN

- PARACETAMOL 120 mg/5 ml Syrup
- Indications : Mild to moderate pain and pyrexia.
- Dosage : Child :
  up to 1 year : 60 – 120 mg.
  1 – 5 years : 120 – 240 mg.
  6 – 12 years. 240 – 480 mg per dose.
  Repeat every 4 – 6 hours when necessary.
  Maximum of 4 doses in 24 hours.