

Chapter-5 | Unit-1 | Pharmacognosy

Laxatives

The drugs are loose the bowels (Intestine) or the drugs producing increasing and hosting intestinal evacuation.

Laxatives are indicated in constipation and in evacuation of the bowel, prior to diagnostic procedure or surgery.

Aloe

Synonyms:-

Aloe, Aloevera

Family :-Liliaceae

Biological source:-

It is the dried juice of the leaves of *Aloe barbadensis* Miller. (Curacao aloes)

Physical Characteristics

Colour	Bright yellow-ish or rich reddish brown to black.
Odour	Penetrating
Taste	Nauseous and bitter
Size	Various Size

Chemical Constituents:-

- Aloes contain a yellow coloured crystalline substance known as barbaloin (C-glycoside) resin and aloe-emodin.
- Aloe emodin
- Barbaloin

Therapeutic efficacy :-

- Improves digestive health.
- Promotes oral health.
- Clears acne.
- Relieves anal fissures
- It used as irritant purgative
- It use for cosmetic and protective
- It also used for treatment of radiation burns.

Castor oil

Synonyms:-

Oleum Ricini

Family:-Euphorbiaceae

Biological Source:-

It is the fixed oil obtained by the cold expression of the kernels of seeds of *Ricinus communis*.

Physical Characteristics

Colour	Pale yellow or almost colourless liquid
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Odour	Nauseating
Taste	Slightly acid

Chemical Constituents:-

Triglyceride of ricinoleic acid, fatty acids.

Isoricinoleic, linoleic, stearic and isostearic acids.

Therapeutic efficacy :-

- Castor oil is used as a cathartic.
- It also used for lubrication commercially.
- Castor oil can be used as an irritant/simulative laxative.
- Castor oil is a natural emollient and a few drops may also be used to remedy dry skin, as a massage oil, and may benefit hair as a treatment. Castor oil contains ricinoleic acid, a fatty acid that comprises about 90% of the oil.

Ispaghula

Synonyms:- Isapgol, Isabgol

Family:- Plantaginaceae

Biological source:-

It consists of dried seeds of the plant known as *Plantago ovata* Forskal.

Chemical Constituent :-

- Isapgol seed contain mucilage
- It consists of **pentosan** and **aldobionic acid**.

Physical Characteristics

Colour	Pinkish-grey or brown
Odour	None
Taste	Mucilaginous, bland
Size	Length : 10 to 35 mm Width: 1 to 1.75 mm

Therapeutic efficacy :-

- It is also useful in dysentery, chronic diarrhoea, in cases of duodenal ulcers and piles.
- It works effectively as a soothing agent.
- The husk are used as demulcent, laxatives and emollient.
- It used as the treatment of chronic construction amoebic and bacillary dysentery.
- Ispaghula is used in the treatment of constipation.

Senna Leaves

Synonyms:-Tinnevelly Senna, Indian Senna

Family:-Leguminosae

Biological source:-

- It consist of dried leaflets of *Cassia angustifolia*.

Physical Characteristics

Colour	Light Green
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Odour	Faint
Taste	Bitter mucilagenous.
Size	3–5 cm long, 2 cm wide and about 0.5 mm thick

Chemical Constituents:-

- It consists not less than 2.0% of hydroxyanthracene derivatives calculated as sennoside B.
- It contains anthraquinone derivatives.
- The active constituents of the drug. They are sennoside A, sennoside B, sennoside C, and Sennoside D.
- Senna Leaves also contains rhein, kaempferol, Aloe-emodin and isorhamnetin etc.

Therapeutic efficacy :-

- Senna Leaves are used as laxatives.
- It is an irritant purgative due to presence of anthraquinone derivatives.
- It causes irritation of large intestine and have some griping effect.
- They are prescribed along with carminatives.
- Senna is stimulant cathartic and exerts its action by increasing the tone of the smooth muscles in large intestine.

Cardiotonic

- The drugs which gives Strength or energy to the activity of the heart.
- Cardiotonic drugs increase the force of the contraction of the muscle (myocardium) of the heart.

Example:- Digitalis, Strophanthusquill, Arjuna bark etc.

Classification of Cardiotonic

Digoxin:

- Digoxin is used to treat heart failure, usually along with other medications. It is also used to treat a certain type of irregular heartbeat (chronic atrial fibrillation).
- Digoxin is one of the oldest medications used in the field of cardiology.
- Treating heart failure may help maintain your ability to walk and exercise and may improve the strength of your heart. Treating an irregular heartbeat can decrease the risk for blood clots, an effect that may reduce your risk for a heart attack.

Milrinone:

- This medication is used for the short-term treatment of heart failure. It works by making your heart beat stronger and by relaxing certain blood vessels so that the amount of blood that is pumped from the heart is increased.

Dexazoxane:

- The heart from damage of continued treatment with chemotherapy agents known as anthracyclines in women with breast cancer.
- Dexrazoxane is an agent that protects patients treated with anthracyclines against cardiac side effects

Phenyephrine:

- Phenyephrine is a decongestant that is used to treat stuffy nose and sinus congestion caused by the common cold, hay fever, or other allergies.

Lisinopril :

- Lisinopril is used to treat high blood pressure (hypertension) in adults and children who are at least 6 years old.

Dopamine:

- Dopamine is a medication form of a substance that occurs naturally in the body. It works by improving the pumping strength of the heart and improves blood flow to the kidneys.

Dobutamine:

- Dobutamine is used short-term to treat cardiac decompensation due to weakened heart muscle.
- Dobutamine is usually given after other heart medicines have been tried without success.

Digitalis

Synonyms:-

Digitalis leaves, Foxglove leaves

Family:-Scrophulariaceae.

Biological Source:- It consists of dried leaves of *Digitalis purpurea* at 60°C below temperature after collecting the leaves.

Chemical Constituents:-

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- Cardiacglycosides (Cardenolideas) 0.2 to 0.45 % Purpurea glycosides.
- They also contains few other glycosides like oderoside H, glucogitaloxin, gitaloxin, verodocin and glucoverodoxin.

Therapeutic efficacy (Uses)

- It is effective in congestive cardiac failure to increase cardiac output and relieve venous congestion.
- The drug is also used to slow the rate of ventricular contraction in patients with atrial fibrillation or flutter.
- Digitalis directly increases the contractile power of the heart muscle, enabling a disease-weakened heart to keep up with the body's demand for heart action
- It increases excitability to cardiac muscles.

Arjuna

Synonyms:-

Arjun bark, Arjun, Terminalia Arjuna rab

Family:- Combretaceae

Biological source:- Arjuna consists of dried stem bark of the plant known as *Terminalia arjuna* Rob.

Chemical Constituents:-

- It contains triterpenoid saponins, arjunolic acid, arjunic acid arjungenin.
- It also contains β -sintoerol, ellagic acid and arjunic acid.

Uses:-

- The bark of Arjun is astringent, sweet, acrid, cooling, aphrodisiac, urinary astringent, and expectorant, but, chiefly used as cardio tonic as it improves blood supply to heart.

- It is also useful in ulcer treatment, fractures, cirrhosis of liver, ischaemic heart disease, and hypertension.
- Arjuna bark is used as a diuretic and astringent.