Pharmacognosy
alkaloids
LEC4
**Reserpine** from *Rauvolfia serpentina*, Apocynaceae

It has been used as a panacea in the Ayurvedic system of medicine.

Reserpine was used as an antihypertensive agent, but due to side effects it is now not the drug of choice.
Physostigmine, Neostigmine and Pyridostigmine

The alkaloids from *Physostigma venenosum*, Fabaceae

Physostigmine is an inhibitor of acetylcholinesterase resulting in an enhancement of the acetyl choline activity, used in Alzheimer's disease (low acetylcholine)
Semisynthetic physostigmine

Based on physostigmine. Which are used to treat myasthenia gravis, a disease characterized by severe muscle weakness.

Neostigmine

Pyridostigmine
Ergot alkaloids

Contamination of rye grain by the fungi *Claviceps purpurea* caused poisoning. The fungus is called ergot.

Sclerotia of the fungus

Ergometrine is used as an oxytocic (induce labour).
ERGOTAMINE

Is used to relieve migraine and is still used today.

It reduces vasodilatation, side effects include gangrene.
The ergot alkaloid were used as a template for the semi-synthetic of bromocriptine, pergolide and cabergolide, which have use in neurological disorder such as Parkinson’s disease.

Ergot can cause hallucination and the hallucinogenic drug of abuse LSD (lysergic acid diethylamide) is structurally related to them.
Mushrooms of the genera *Psilocybe, Panaeolus, Conocybe and Stropharia* are known to produce psychoactive substance such as psilocybin, which is salt in the fungi and is converted into psilocin in vivo.
most important group of indole group are the anticancer agents from the Madagascar periwinkle *Catharanthus roseus*, Apocynaceae. These dimeric indole is difficult to synthesizes and found in low quantities in the plant, so it is very expensive. Treat leukaemia and solid tumours.
Strychnine and Brucine (dimethoxy strychnine)

Are the bitter indole alkaloids from the seeds of Nux vomica. These CNS stimulant alkaloids are highly toxic. Now it is used as rodenticides.
Harmine and harmaline

Are structurally related to tryptamine, an alkaloid from *Peganum harmala*. Flourescent under UV
Theses alkaloids are psychoactive used to treat heroine addiction.

Tryptamine
Harmine
Harmaline
THANK YOU FOR LISTENING