

FACULTY OF PHARMACY

PHYTOTHERAPY FOR EYE, EAR, NOSE AND OROPHARYNX

Phytotherapy

Dr. Yousef Abusamra



A brief description of some plant remedies used for eye, ear, nose and oropharynx ailments and complaints

The eye, ear, nose and oropharynx

1

The eye

- Simple eye lotions containing mild astringent and soothing plant products are very popular, especially those containing distilled **witch hazel** and **eyebright herb** extracts.



2

Glaucoma

- It is associated with **increased intraocular pressure** and can cause blindness if not treated.
- Glaucoma is always treated by medical supervision.
- Most of the drugs used are synthetic sympathomimetics such as **dipivefrine** (a prodrug of epinephrine) and **brimonidine**, **β-blockers** such as **timolol**.
- There is also plant-derived miotics (related to miosis) like **pilocarpine**.

3

Glaucoma

- Pilocarpine: is an alkaloid from *Pilocarpus jaborandi* leaves.
- This alkaloid is **parasympathomimetic** that reduces the intraocular pressure by opening the drainage channels in the, trabecular meshwork [**an area of tissue in the eye located around the base of the cornea, near the ciliary body, and is responsible for draining the aqueous humor from the eye via the anterior chamber (the chamber on the front of the eye covered by the cornea)**] which may be affected by a spasm or contraction of the ciliary muscle.
- It is used in open-angle glaucoma and to counteract the use of atropine.
- It is prescription-only medicine.
- **Precaution:** salivation, tachycardia if taken internally.

4



6

Anterior uveitis

- Anterior uveitis is an inflammatory disorder of the anterior segment .
- It is treated with atropine or its derivative , homatropine and tropicamide

6



7

Anterior uveities

- Is an inflammation of the middle layer of the eye. This layer includes the iris (colored part of the eye) and the adjacent tissue, known as the ciliary body. If untreated, it can cause permanent damage and loss of vision from the development of glaucoma, cataract or retinal edema.
- Atropine; it is an alkaloid obtained from *Atropa belladonna*.
- It is used in drop form to open the iris for examination or surgical procedures (Mydriatic effect).

8



10

Inflammation of the eye

■ Inflammation may be a result of:

1. An allergic reaction.
2. Infection.
3. Irritation of the eye.



■ **Eyebright:** (*Euphrasia officinalis*) العرقون:

- Has a long history of use in eye disorders.
- It contains:
 1. Iridoid glycosides such as euphorosides.
 2. Tannins.
 3. Lignans.

10



11

Witch hazel



- Distilled **witch hazel** is prepared by macerating **نقع** the dormant and partially dried twigs of *Hamamelis virginiana* leaves.
- It is used in **eye drops** dosage form to sooth the eye and clear redness.



12



13

Ear, nose, orthopharynx

- Infection of ear, nose and throat are treated **under medical supervision** with antibiotics, but a number of soothing and antiseptic preparations from plant sources are available for use.

Decongestants: shrink swollen blood vessels and tissues.

- Decongestants come in pills, liquids, nose drops, and nasal sprays.
- Many are available without a prescription.

14

The ear

- Infections of the ear are treated with either topical or systemic antibiotics.
- However, the removal of wax from the ear is achieved with the aid of softening agents such as **almond**, **arachis** **الفول السوداني** **Peanut** or **olive oil** followed by ear syringing (ear irrigation).



15

Ear

Almond oil

- *Prunus amygdalus*:
 - The fixed oil is obtained from the **seeds** of (sweet almond oil).
 - The oil consists of triglycerides mainly **triolein** [is a **symmetrical triglyceride derived from glycerol and three units of the unsaturated fatty acid, oleic acid**] and **trioleolinolein**, together with the fatty acids such as palmitic (16 C's), lauric (12 carbons) , myristic (14 C's) and oleic (18 C's) acids.

16



17

The ear Olive oil

Olea europaea:

- The oil is expressed from the fruits (virgin or cold expressed) oil then refined where it will have a yellowish color.
- **Expression:** also referred to as “cold pressed”, is a method where oil is obtained by using **high mechanical pressure** to literally squeeze the oil from the plant material.
- It consists of glycerides of oleic acid (70-80%) with smaller amounts of linoleic, palmitic and stearic acid.

18



19

Oropharynx

- Special oral and throat irritation can be treated with an anti-inflammatory and antiseptic mouthwash, including **thymol-type preparations**.
- Many essential oils are used as deodorizers (**unpleasant smell removers**) and anti-inflammatory agents, including **mint**, **clove**, **eucalyptus الكينا** and **lemon oils** as well as **menthol** and **thymol**.
- These can be incorporated in artificial saliva products (**hydroxypropyl methylcellulose = lubricants for eye and artificial saliva**)

20

Oropharynx Thymol

- Thymol is extracted from different species of **thyme**.
- It is widely used in **dental products**.
- It causes irritation in large concentrations when applied externally and should not be swallowed in significant amounts.
- Normal concentrations associated with the herb do not normally cause problems.
- Thymol is **antiseptic**, **deodorizing** and **anti-inflammatory**.

21



22

Oropharynx. Peppermint oil

- Peppermint oil is antiseptic, deodorizing and anti-inflammatory.
- It is widely used in skin and dental products.



23



24

Oropharynx Sage

- **Sage = *Salvia officinalis*:**
- The volatile oil contains α and β **thujone** as the **major component** 50% with **cineol, rosmarinic acid** and **flavonoids**.
- It is **used** as a tea or gargle **to sooth inflammation of gums or throat**.
- Rosmarinic acid has antiviral and anti-inflammatory effect.

25

Oropharynx Sage

- A throat spray containing **sage** and **Echinacea** [Coneflower, القنفذية] was recently compared to chlorohexidine / lidocane spray.
- They used 2 puffs for acute sore throat, every 2 hours, up to 10 times daily for 5 days.
- The outcome of this study was that 63% of the patients were symptoms-free, compared to 57% of patients used chlorohexidine / lidocane.

26



Echinacea



Sage,
Salvia officinalis

27

Clove

- They are the flower buds of *Syzygium aromaticum* = (*Eugenia caryophyllus*)
- The buds are very rich in essential oils 15-20% with **eugenol** as the main component.
- It is used for **relief of toothache** and other **dental preparations**.
- Eugenol inhibits prostaglandin synthesis (**possible mechanism of action**).



28



29