

# Surface active drugs

# Effect

- **Systemic** – transdermal application  
(patches, gels)
  - contraception - EVRA
  - hormonal substitution therapy – OESTROGEL
  - opioids - DUROGESIC
- **Local**



# Systemic effect



# Local effect

- **Disinfectants, antiseptics**
- **Adstringents**
- **Keratolytics and keratoplastics**
- **Epitelizants, granulants**
- **Therapy of acne**
- **Draining agents - Derivancia**
- **Substances against itch**
- **Antipsoriasis drugs**
- **Proteolytic enzymes**
- **Antihidrotics a antiseborrhoics**
- **Photoprotective substances**
- **Antiparasitic drugs**
- **ORL drugs**

# Disinfectants, antiseptics

## Mechanisms:

***Oxidation*** – acids, H<sub>2</sub>O<sub>2</sub>, KMnO<sub>4</sub>, chlorine

***Hydrolysis*** – acids, alkali agents, heat

***Salt formation with proteins*** - heavy metals, halogens

***Protein coagulation*** – phenols, alcohols, quaternary compounds

***Permeability changes*** – soaps, quaternary compounds

***Enzymatic system damage*** – metals, phenol,

methanal = formaldehyde

## **Solutio Jarisch:**

**Rp. Acidi borici 20,0**

**Glyceroli 85% 40,0**

**Aquae purificatae ad 1000,0**

**M.f.sol.**

**s.a.**

**D.S.: sol. Jarisch s.a.**

- used in dermatology and cosmetics**
- weak disinfectant, calms the skin**

## Heavy metals compounds:

### mercury:

Phenylhydrargyri boras

Thiomersal



Used as conservants  
for IPLP

### silver:

Argenti nitras (black spots)

Targesine - used in nasal and eye drops (Argenti diacetyltanas albuminatum)

# Halogens

**chlorine** chloramin T - tosylchloramidum natricum  
chloramin B - benzylchloramidum natricum

**iodine** iodum, sol. iodi glycerolica, spirituosa

**iodophores**  
(BETADINE, JODISOL)

Allergies !





# Alcohols, aldehydes, phenols, parabens

## ethanol

- 60% (dilutus)
- 85% (concentratus)
- 96% (absolutus)

**formaldehyde** – solution and vapour

**triclosan** – acne vulgaris

**parabens** – esters of *p*`-hydroxybenzoic acid

# Soaps, quaternary ammonia salts

- decrease surface tension

Sapo kalinus, Sapo medicinalis

Spir. saponis kalini

Benzododecinii bromidum - AJATIN

Carbethopendecinii bromidum - SEPTONEX

- humidifies mucouses



# Organic dyes

gentian-violet - Methylrosanilini chloridum - 0,5-2%

methylen blue - Methylthioninii chloridum

brilliant green - Viride nitens

yellow acridine dye – up to 2% - Ethacridinium  
lacticum

# Adstringents

- coagulate proteins (↓ penetration of inf. agents)
- anti itch, calming, cooling, antiseptic effect
- **alumini acetotartras (sol. Burrow)**
- **AgNO<sub>3</sub> (0,5-1%)**
- **natural resources – galla, Juglans, Hammamelis, Alchemilla, Agrimonia, Fragaria**
- **tannins - Galotannins, Elagotannins**

Indications: burns, frost-bites, fissures, diarrhoea...

- Galla – oak apple



# Keratolytics

- help to remove defective layer of skin
  - indication: psoriasis, hyperkeratosis
- 
- **ac. salicylicum more than 5 %**
  - **urea 2-20 %**
  - **tretinoin 1-3 %** (temporary aggravation!)

# Keratoplastics

- help to stimulate formation of new skin layers
  - **ac. salicylicum less than 5 %**
  - **ichtamol, pitches – Pix lithantracis, betulae, fagi**
  - **tretinoin 1-3 %** (temporary aggravation!)

# Epitelization supporting drugs

allergies !,  
dehumidifying



- **pantothenic acid**
- **dexpanthenol** (part of CoA structure)
- **peru balsam**
- **chlorophyll**
- **chamazulen** (Chamomilla)
- **benzoylperoxid** Eclaran®
- **AgNO<sub>3</sub>** up to 1 %
- **propolis...**



# Granulating agents

- stimulate grow of new tissue
- **AgNO<sub>3</sub>** up to 1 %
- **salicylic acid** 1-2 %
- **peru balsam** – allergies!

varicose ulcer



# Emollients

- short term calming and hydrating activity
- effect is increased by menthol and camphor
- **liquid paraffine**
- **Vaselinum album, flavum (white and yellow)**
- **Ol.sojae, amygdalae, jecoris aseli**
- **Ac. linoleicum**
- **Urea (up to 10 %) – better penetration**

Polysan cum oleo helianthi

**! Lanolin, parabens - allergy !**

# Therapy of acne

- acne vulgaris
- acne rosacea

seborrhoea, ↑ androgenes,  
hyperkeratosis, bacterial infection

*Propionibacterium acnes*



© R Suhonen

Aggravation:

androgenes

Candida, fungi

vit. B6, B12

**Local: antiseptics** - triclosan, hexachlorophen,  
benzoylperoxide

**retinoids** – retin acid, tretinoin, isotretinoin

**antibiotics** - erythromycin, klindamycin,

**antifungal drugs:** klotrimazol, azelaic acid

**Systemic: ATB** – erytromycin, doxycyclin,  
minocyclin; retinoids

⇒ gestagene contraception in women -  
antiandrogene activity (cyproteron ac.,  
chlormadinon, norgestimat + ethinylestradiol)

**KI: Kortikosteroids!**

# Draining agents (derivancia)

- irritate skin and mucous → vasodilatation
- menthol, camphor
- ammonia, spirit, iodine
- bees and snake poisons (Viprosal)
- capsaicine (capsicum anuum) →
- oleum et semen sinapis, erucae



# Anti-itch drugs

⇒ itch sensation is replaced by other feeling

cool - menthol, camphor

⇒ itch reduction

local anaesthetics, local antihistaminics

⇒ drying (plv. adspersorii)

⇒ ichtamol, pitches, keratolytics



# Liquid powder with menthol – for sore-spots

Rp.

Zinci oxidi 25,0

Talci 25,0

Glyceroli 85% 25,0

Sol. aerosili 25,0

Mentholi racemici q.s.

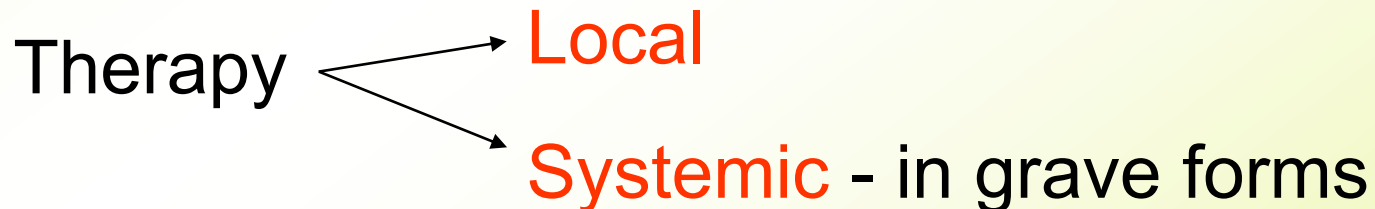
M.f.susp.

D.S. liquid powder

# Anti-psoriatics

**Psoriasis** - chronic skin disease characterized by scaly reddish patches, affects up to 2 % of population, no clear ethiology (autoimmune disease)

Often affected places: knees, around eyes, cubitus, back





**Local** – indifferent vehicles

+ ichtamol

+ weak corticosteroids - betamethason,  
fluocinolone

many relapses!

+ pitch (tct. carbonis detergens)

+ salicylic acid 2-3%

+ vitamin D derivates (calcipotriol)

+ retinoids

**Systemic** – psoralenes – derivatives of furanocoumarine

+ phototherapy (UVA)

- retinoids – acitretine

(serious adverse effects,  
contraindicated in gravidity)

In very grave forms: immunosuppressants

# Proteolytic enzymes

⇒ in therapy of ulcers, decubites, necrosis in lesion

**Fibrinolysine** – destroys fibrinogen and blood proteins

**Collagenase**

**Deoxyribonuclease** – destroys DNA

Bromelaine (pineapple)

Papaine (papaya)

...

# Antihidrotics

- reduce sudoriferous gland secretion
- act directly on the gland

Locals:

- **$\text{KMnO}_4$**
- **salicylic acid**
- **tannics**

Systemic:

**Anticholinergic** drugs:  
butylskopolamine

**Other drugs:**

amitryptiline,  
nortryptiline, dosulepine,  
chloprotixen, diazepam

# Antiseborrhoeic drugs

- reduce ceruminous gland secretion

- **ac. salicylicum**
- **camphor**
- **ichtamol, pix**
- **Sulphur**
- **+ azoles**

Aggravated by:

androgenes

Candida, fungi

# Photoprotective substances

- protect skin against UV radiation
- block of all types of radiation - physical factors:
  - zincum oxydatum, ZnO
  - calcium carbonicum praecipitatum, CaCO<sub>3</sub>
  - talc, bolus alba
- absorbate certain wave-lengths - chemical factors:
  - Tanninum, Chinninum sulfuricum
  - acidum paraaminobenzoicum

# Antiparasite drugs

Scabies; Pediculosis - lice (pediculation)

**Polychlorine carbohydrates – lindane**

**organophosphates - *malathione, pirimiphosmethyl***  
acetylcholinesterase inhibition

**carbamates - acetylcholinesterase inhibition**

**pyrethroids – synthetic derivatives of *Pyrethrum***

# ORL drugs

## Nasal antiseptics:

Boric acid 3%

Natrii tetraboras 2%,

Carbethopendecinii bromidum 0,02–0,05% -  
SEPTONEX

Argenti diacetyltannas albuminatus 4–6%





# Decongestants - sympathomimetics:

naphazolini nitras 0,05-0,1%

ephedrini hydrochloridum 0,5 -1%

tetryzoline, oxymetazoline, xylomethazoline



# Antiseptics for buccal cavity

Benzalkonii chloridum – SEPTOLETE

Cetylpyridinium chloridum – Neo SEPTOLETE

Benzoxonium chloridum – OROFAR

Chlorhexidin diglukonas – SEPTOFORT, HEXORAL

Dichlorobenzenmethanol – NEOANGIN, STREPSILS

Benzydameni hydrochloridum – TANTUM VERDE

Ethacridinium Lacticum (Rivanol) – indiv. prep.

Hexetidin - STOPANGIN

