

# OPHTHALMIC USES OF CYCLOSPORIN E/D

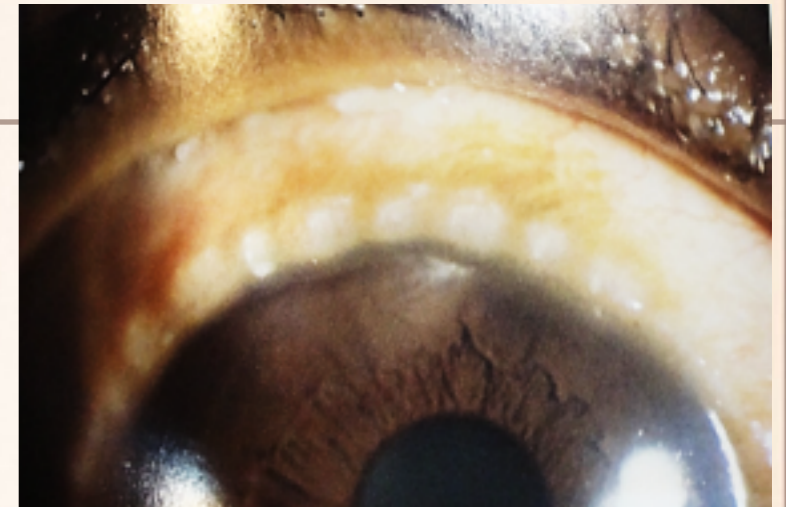
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**Pharmacodynamics:** Cyclosporin is an immunomodulator drug; it inhibits T lymphocyte activation/proliferation & release of inflammatory mediators (acts as a perfect steroid-sparing drug)

- Eyedrops have to be prepared fresh as preservatives kill the active ingredient, hence it has no shelf life.
- It has no intra-ocular penetration and concentrates on the ocular surface.
- It is trophic to lacrimal & meibomian glands & conjunctival goblet cells thereby increasing their secretions.

# VKC: CYCLOSPORIN, 1%E/D

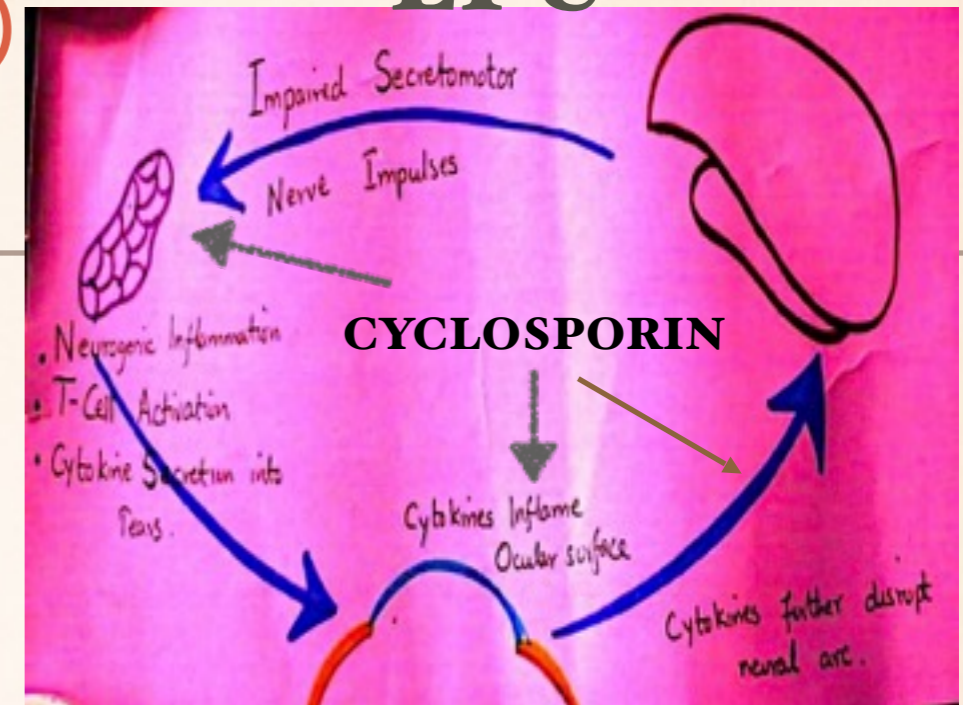
- ❖ **VKC + STEROIDS** CAUSE CORNEAL THINNING, PANNUS, CORNEAL ECTASIA, ASTIGMATISM & VISUAL MORBIDITY.
- ❖ **CYCLOSPORIN E/D ARE STEROID-SPARING** AND WITHOUT THE STEROID-RELATED SIDE-EFFECTS AFTER PROLONGED USE, APART FROM STINGING & BURNING SENSATION UPON INSTILLATION.
- ❖ **PREPARATION:** SANDIMUM NEURAL (NOVARTIS) CAPSULES CONTAIN WATER-MISCIBLE GEL (25 & 100 MG CAPSULES)
- ❖ STEP1: MULTIPLY REQUIRED % VALUE X 10= 1 X 10 =10
- ❖ STEP2: MULTIPLY STEP 1 VALUE X VOLUME REQ = 10 X 5 =50. NEED 50 MG CYCLOSPORIN (2 CAP OF 25 MG) TO BE DISSOLVED IN 5 ML SOLVENT (DISTILLED WATER)



# DRY EYES: 0.5% E/D

- ❖ **LACRIMAL FUNCTIONAL UNIT (LFU):** A REFLEX: BRAIN ORDERS LACRIMAL GLAND TO SECRETE IN RESPONSE TO IMPULSES FROM OCULAR SURFACE.
- ❖ **IN DRY EYES,** INFLAMED OCULAR SURFACE BLOCKS IMPULSES GOING TO BRAIN SO LESS TEAR SECRETION.
- ❖ **CYCLOSPORIN** CONTROLS OCULAR SURFACE INFLAMMATION (BLOCKS T LYMPHOS & CYTOKINES), INCREASES GOBLET CELL COUNT IN CONJUNCTIVA, IMPROVES MEIBOMIAN SECRETION. **SO ALL 3 LAYERS OF TEAR FILM IMPROVE.**

## LFU



# MEIBOMIAN GLAND DYSFUNCTION

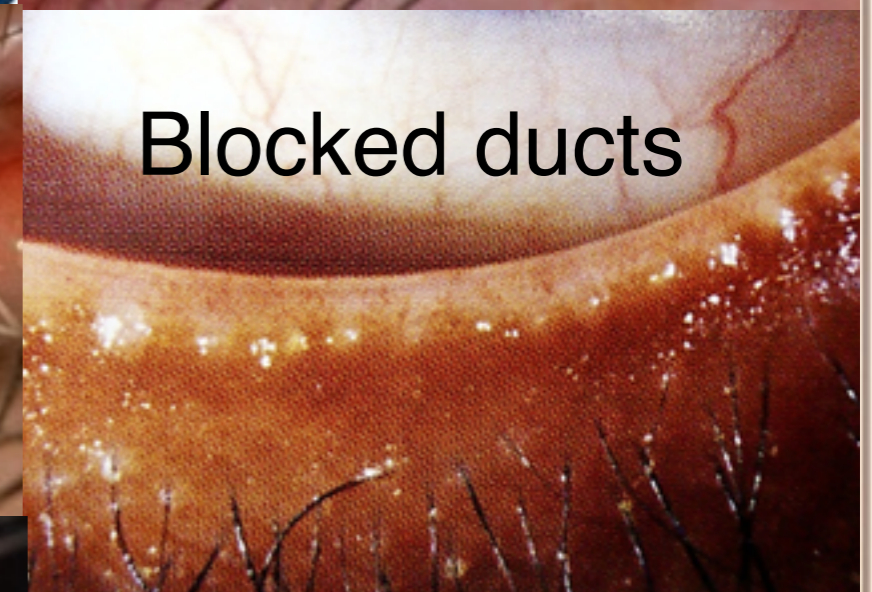
- ❖ **A major cause of Dry Eyes**, seen in almost everyone over age 40 yrs.
- ❖ Treatable early by hot fomentation, expressing thick secretion manually, probing of blocked ducts.
- ❖ **Cyclosporin E/D** reduce inflammation, improve meibum secretion.
- ❖ Prepared in Caster oil to replace lipid layer of tear film.



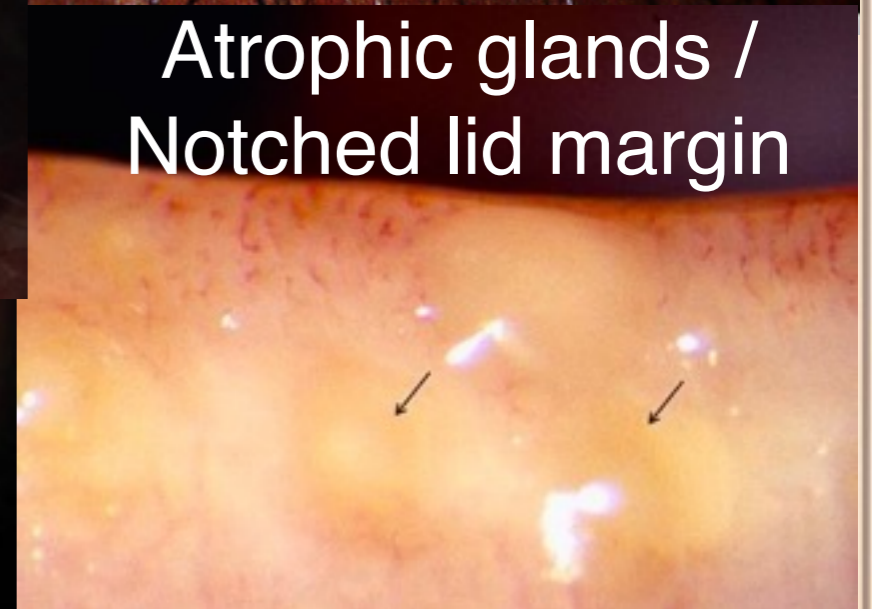
Vicid Meibum



Expressing thick Meibum



Blocked ducts



Atrophic glands / Notched lid margin



Probing ducts

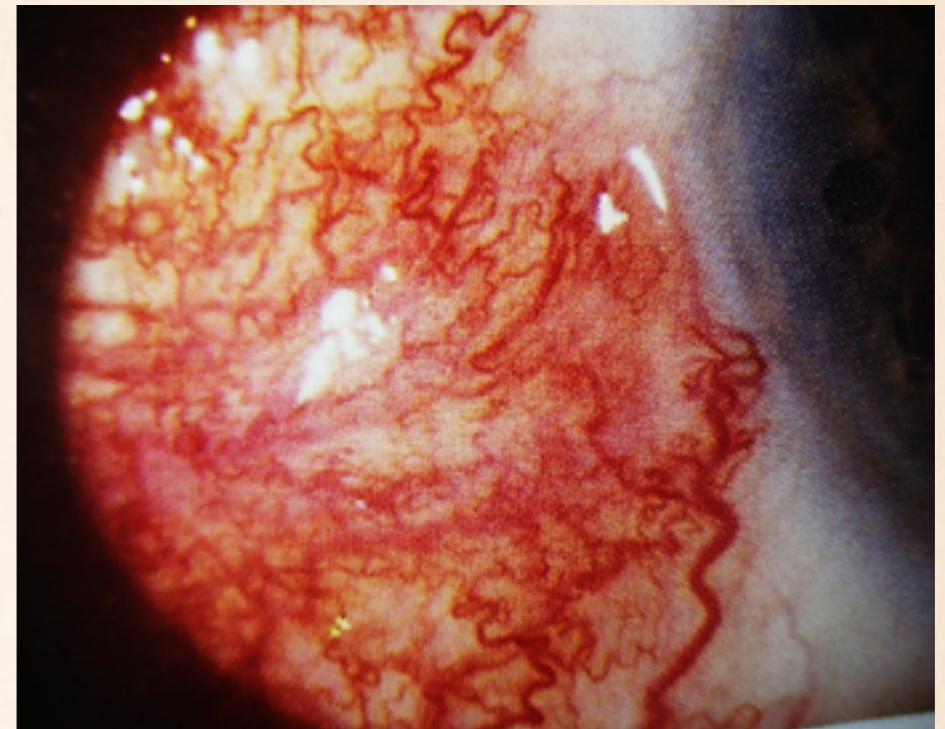
**SCLERITIS: 1% E/D**

**EFFECTIVELY CONTROLS  
SCLERITIS WITHOUT CAUSING  
CORNEO-SCLERAL THINNING.**

**1% = 1 X 10=10, AND**

**10 X 5 = 50**

**DISSOLVE 50MG CYCLOSPORIN  
GEL IN 5 ML DISTILLED WATER.**



**MOOREN'S ULCER: 2% E/D**

**PREPARED BY DISSOLVING**

**2 X 10=20**

**20 X 5=100, SO 100 MG  
CYCLOSPORIN IN 5 ML  
DISTILLED WATER.**

**CYCLOSPORIN HAS NO SHELF  
LIFE, HAS TO BE PREPARED  
WEEKLY!!!**

