The cornea and the herpes virus

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Herpes Viruses

- HSV-1, 2
- Oral and genital herpes
- Varicella Zoster
- Chicken pox/shingles
- Epstein Barr
- Glandular fever
- CMV

90% infected
Latent virus in most

Herpes simplex keratitis

Infectious epithelial keratitis
Neurotrophic keratopathy
Punctate erosions
Neurotrophic ulcer
Stromal keratitis
Necrotising stromal keratitis
Immune stromal keratitis (most common)
Endothelitis
Keratouveitis

Viral
- HSV
- HZV
- EBV and adenovirus
- Measles and mumps
- Phlyctenular keratitis

Actively replicating organisms in red

Parasitic
- Acanthamoeba
- Onchocerca volvulus
- Microsporidia
- Leishmania
- Cysticercosis
- Trypanosomiasis

Non-infectious systemic
- Cogan's
- Sarcoid
- Lymphoma
- Kaposi's sarcoma

Nummular opacities
CI related

Herpes simplex keratitis
HSV is the most common virus acquired by humans.

- IgG
  - >70% before 20 yrs
  - 95% after 70 yrs
- Clinical infection in <1% with the virus

**HSV type**

- HSV type 1+2:
  - Antigenically related
  - May coinfect nerve ganglion
- HSV-1: more common above waist
- HSV-2: below waist
  - Less susceptible to valacyclovir/acyclovir than HSV-1

**HSV in children**

- Bilateral
  - 10-20% (mean 16%)
- Recurrent
  - 50% within 1-2 years
- More severe
  - Scarring more likely

**Recurrent HSK**

- Stromal keratitis +/- ulceration
- Endotheliitis
- Loss of vision
  - Scarring, thinning, neovascularisation
- Superinfection different strain of HSV in 1/3rd

- DDx adenoviral infection
- Stromal keratitis +/- ulceration
- Endotheliitis
- Loss of vision
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- Superinfection different strain of HSV in 1/3rd
Adherence to treatment recommendations

<table>
<thead>
<tr>
<th>Prophylaxis</th>
<th>16/301 (54%)</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endothelial</td>
<td>6 (13%)</td>
<td>12</td>
</tr>
<tr>
<td>Stromal no epithelial...</td>
<td>2 (9%)</td>
<td>2</td>
</tr>
<tr>
<td>Epithelial</td>
<td>125 (89%)</td>
<td>16</td>
</tr>
</tbody>
</table>

164/301 (54%) met recommendations


Topical vs oral acyclovir

- Systemic ACV in addition to topical antivirals
  - no benefit clinically evident effect in adults
  - Children: beneficial as application of topical medication difficult
- **Systemic** better than topical for prophylaxis
  - Action on latent HSV in ganglion

Aciclovir & Valaciclovir

- Valaciclov PO rapidly converted to acyclovir
- Bioavailability 3 to 5 times greater than oral aciclovir
- Safety profile the same
- Valaciclov 500mg BD = Aciclovir 200mg 5 X daily

Ganciclovir gel 0.15%

- Similar to occ Aciclovir
  - Epithelial keratitis
  - Adverse events less
- Prophylaxis
  - Possible role post-PK
  - Long term data lacking

Herpes Zoster Keratitis
Acute keratitis
- Punctate keratitis
- Pseudodendrites
  - Stuck on
  - Stain poorly
  - Lack terminal bulbs
  - Do not branch dichotomously
- Nummular keratitis

Chronic relapsing keratitis
- Filamentary keratitis
  - Difficult to treat
- Interstitial keratitis
- Disciform keratitis

Long-term sequelae
- Neurotrophic ulcers
  - More likely to perforate
- Corneal haze + epithelial irregularity
- Ocular surface disease

Management
- Oral antivirals within 72 hours
  - 2 x the dose for HSK
- Topical steroids with slow taper
- Treat OSD
- Little evidence for prophylactic antivirals

EBV Keratitis
- Children and adolescents
- Interstitial keratitis
- Difficult to diagnose
  - Serology, PCR negative
  - Topical steroids

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CMV keratitis

- Endotheliitis
- Graft rejection
- In the setting of AIDS
  - Epitheliitis
    - Elevated, opaque, branching, non-ulcerative
  - Stromal keratitis

CMV endotheliitis

- Linear kps and 'coin-shaped' lesions
- Oedema
- Anterior uveitis with ↑ IOP
- Think of the diagnosis !!!
  - Poor outcomes with delay

CMV endotheliitis

- Clinical diagnosis
- AC tap
  - Viral DNA + local antibody
- Topical steroids
- PO valganciclovir 900 mg BD for 6 weeks then daily 6 weeks

Thank you

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Dr Yves Kerdraon
Dr Richard Symes
Prof Peter McCluskey

Glitter is the herpes of crafting.
It spreads everywhere and is impossible to get rid of.