

Vaccination of corneal herpes (HSK)

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Corneal herpes is not a major concern anymore after effective antivirals have been introduced in ophthalmology clinics. However, immune mediated herpetic stromal keratitis (HSK) still remains the major infection related visual disturbances.

To prevent stromal haze, extended period of combined use of steroid +antivirals is mandatory. Obviously prolonged steroid treatment should be avoided. Up to now, several vaccines trials in murine genital herpes caused by HSV-2 have been reported.

Attenuated HSV-2 (HSV TK-) has been inoculated in the deep nasal mucosa where the attenuated virus proliferated. Subsequently, it elicited educated CD4T+ cells in the nasal mucosa but not in local dorsal lymph nodes. These CD4 T cells migrated to the vaginal mucosa and educated cervical and/or vaginal mucosal B cells to secrete secretory IgA. However, application of these protocols to the corneal herpes (HSK), there are many pit falls in these projects. Olfactory nerve

is directly extended from the olfactory bulb, therefore it may serve the main entry route of HSV to the brain. Another likely way of HSV to the brain may through tentory nerve via dorsal root ganglion.

Spontaneous shedding of the HSV can be detected quite frequently in tears, therefore bilateral nasolacrimal ducts continually carries numerous virus particles.

We have to pay enough considerations to the HSV-1 vaccination in the deep nasal mucosal epithelium. Attenuated live vaccine is far better than killed/component vaccine to cope with complicated immune mediated HSK.

Clinical HSK in human population results long after prolonged repeated recurrent events. Although we have learned details of immune mediated characteristics of corneal herpes in mouse (C57/Bl or Balb/C) models, we need more studies before safe effective HSV vaccine could be in common usage.

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