CASE STUDY: MAY 2013

Immune surveillance by CD8aa+ skin-resident T cells in human herpes virus (HSV) infection


BACKGROUND

• CD8+ T cells persist in genital skin and mucosa at the dermal-epidermal junction (DEJ) – the portal of neuronal release of reactivating virus – for prolonged time periods after HSV lesions are cleared
• The phenotype and function of this cell population remain unknown

AIM
To characterize persistent CD8+ T-cell populations in HSV-2 infected genital skin

METHODS
Genital skin biopsies were collected from individuals with symptomatic HSV-2 infection. Unaffected genital skin was taken as a control from each individual

RESULTS

• Data from six biopsies obtained during and after multiple episodes of herpes recurrence from one individual

CONCLUSIONS

• The DEJ CD8aa+ T cells are oligoclonal with diverse usage of T-cell receptor variable-beta genes, which differ from those commonly described for mucosa-associated invariant T cells and natural killer T cells
• These data indicate that DEJ CD8aa+ T cells are tissue-resident cells that seem to have a fundamental role in immune surveillance and in initial containment of HSV-2 reactivation in human peripheral tissue
• Elicitation of CD8aa+ T cells may be a critical component for developing effective vaccines against skin and mucosal infections

The clonality and diversity of T-cell population could be assessed