Acyclovir Cream Prevents Clinical and Thermographic Progression of Recrudescent Herpes Labialis beyond the Prodromal Stage

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Early treatment of recrudescent herpes labialis over the symptomatic area has been claimed to inhibit the clinical signs of recrudescent herpes labialis. Electronic infrared thermography can both recognise the prodromal phase and identify the area requiring drug therapy.

Our objective was to use infrared thermography to identify prodromal herpes and follow the response to topical acyclovir cream therapy over the thermographically active area.

Seventy instances of prodromal cold sores were confirmed thermographically. Zovirax cold sore cream (acyclovir) was applied 5 times per day for 5 days to the thermographically positive area. All returned after 72 h for a further thermographic and clinical examination of the initially active area.

All 70 patients illustrated a localised increase in temperature over the symptomatic area during the prodromal stage. The development of a clinical herpes lesion was prevented in 46% of the patients. In the lesions that did develop, an 80% reduction in clinical lesion size was observed in 82% of the subjects. The remaining 18% showed a reduction in healing time. Key words: imaging; antiviral; infection.

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The appearance and size of the subclinical prodromal phase of recrudescent herpes labialis (RHL) have been objectively measured by electronic infrared thermography (IRT) (1). The method has been used to study the preventative effect of acyclovir cream.

METHODS AND MATERIALS

Patient population
Seventy active episodes of RHL were thermographically assessed in 70 patients. All attended during the subclinical prodromal stage of the developing RHL, with a mean presentation time for the group of 7 h ± 5 h. All reported perceived prodromal symptoms of tingling at one of seven anatomical sites. The distribution was approximately 50% on both the upper lip and lower lip, respectively. Four presented with lesions directly below the nose. Seventeen episodes were located on the right part of the upper lip. Eight episodes were on the midline of the upper lip, with 7 on the left quadrant of the upper lip. The distribution of lower lip episodes was comparable with 8 on the lower right quadrant, 6 on the midline and 20 on the lower left quadrant.

On attendance during the prodromal phase all patients showed an increase in temperature with the mean localised change in temperature (ΔT °C) being 1.1 °C ± 0.3 °C over a mean thermographically positive area of 126 mm² ± 34 mm² (Fig. 1), as compared to the contralateral side. Of the 70 lesions all treated with acyclovir cream, 32 (46%) returned after 72 h of treatment with complete prevention of the developing lesion (Fig 2), i.e. no clinical, thermographic or symptomatic evidence of RHL. Thirty-eight lesions (54%) progressed to produce a clinical manifestation of RHL. In 31 of these cases the ΔT °C mean measured at the symptomatic site was 0.6 °C ± 0.2 °C.

RESULTS

Seventy active episodes of RHL were thermographically positive area. Each patient was dispensed a 2-g tube of Zovirax cold sore cream (Wellcome Warner Consumer Health Care, Dartford, Kent, U.K.), which contains 5% acyclovir w/w, and directed to apply this topically 5 times per day for 5 days to the thermographically positive area. Patients were asked to return 72 h later and underwent the same study protocol to assess lesion termination/development. Patients who developed clinical lesions had virus culture for identification of HSV-1 as previously reported (1).

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The clinical area of these lesions was reduced by about 80%, with the mean area being $10 \text{ mm}^2 \pm 9.5 \text{ mm}^2$. The remaining 7 lesions (10%) in which patients related no improvement in the initial clinical course of their RHL after treatment exhibited a mean area of $31.5 \text{ mm}^2 \pm 6 \text{ mm}^2$.

No difference was observed in the $\Delta t^\circ C$ values for the three outcome groups, i.e. prevented, clinically improved and non-improved, and no relationship was observed between treatment outcome and the time elapsed before treatment began. They were $1.1 \pm 0.3$, $1.0 \pm 2.5$, and $1.1 \pm 0.25$, respectively, and the time before treatment values was $6-8 \text{ h} \pm 6.3$, $7.1 \text{ h} \pm 6.4$ and $7-8 \text{ h} \pm 6.1$, respectively. Three patients reported adverse effects: one reported a dry flaking area, which affected the uninvolved skin to which the cream was applied, and 2 patients reported a stinging sensation on applying the cream.

**REFERENCES**