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عنوان مقاله:

Evaluation of two anti-herpes simplex Infection in Skin and Ocular Infection in Mouse Model

محل انتشار:

سیزدهمین کنگره بین المللی میکروب شناسی بالینی استاد البرزی (سال: 1398)

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خلاصه مقاله:

Background and Objectives: Herpes simplex virus 1 (HSV-1) is responsible for a wide range of diseases, affecting the skin or mucous membranes (cold sores, genital herpes, and gingivostomatitis), the eye (herpetic keratitis), or the central nervous system (necrotizing encephalitis and meningitis). We previously determined that the Triptolide and (S)-10 Hydroxycamptothecin have a significant inhibitory effect on HSV-1 plaque formation virus and besides they were inhibiting attachment and entry of the virus. The goal of this study was to assess in vivo anti-HSV-1 activity in murine models of herpes ocular and cutaneous infection. Material and Methods: The dorsal part and left eyes of each mouse was scratched in a gridlike pattern using a sterile 27-gauge needle, Mice were infected by application of 50 of Dulbecco's modified Eagle medium (DMEM) (2% serum) containing 1.0× 105 PFU of HSV-1. Dulbecco's modified Eagle medium (DMEM) (2% serum) was mixed with Triptolide and (S)-10-Hydroxycamptothecin to achieve a final concentration of 0.2 and 2 mg/kg, respectively. There were 4 treatments with 10 mice per group. HSV-1 genomes and titers in the Trigeminal Ganglion (TG) assessed by qPCR and plaques assays, respectively, at 3, 6, 9 day post-infection(dpi) Mice (n = 3 per treatment group) were euthanized to extract the TGs. Homogenized TG lysates were used for qPCR to detect HSV-1 genomes and were also used to titer HSV-1 on Vero cells. Results: Mice that were treated with Triptolide and (S)-10 Hydroxycamptothecin had significantly ($P < 0.05$) lower disease scores, compared to the mock-treated mice. HSV-1 genomes and titers in the TG were assessed by qPCR and plaques assays, respectively, at 9 dpi. As revealed, qPCR to detect HSV-1 genomes showed significance between the mock-treated and Triptolide and (S)-10 Hydroxycamptothecin -treated mice was determined by one-way ANOVA followed by Dunnett's multiple comparisons test.Conclusion: This study has demonstrated in vivo potential of Triptolide and (S)-10 Hydroxycamptothecin for the treatment of cutaneous herpes. We have also shown that these compounds were active against ocular HSV-1 infection and, therefore, has a potential to be developed as an antiviral.

کلمات کلیدی:

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