



<b>Abstract Title:</b>	<b>Herpes Simplex Virus in Burn Patients</b>
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<b>Objective:</b>	Upon completion of the lecture, attendees should be better prepared to: <ul style="list-style-type: none"><li>▪ Describe the role of serum HSV titers in screening for the development of active HSV infection in high-risk patients</li><li>▪ Characterize the incidence of HSV burn wound infections in high-risk burn patients</li><li>▪ Describe the associated morbidity and mortality of HSV-infected patients</li></ul>
<b>Abstract:</b>	<p><b>Introduction:</b> Herpes simplex virus (HSV) is common in the human population and reactivation of a latent infection can occur during periods of stress or illness, such as a serious burn. Previous studies have shown that HSV infections may complicate the healing process and increase morbidity in burn patients. This study aimed to characterize the incidence of HSV burn wound infections among high-risk patients, determine the role of serum titers in screening, diagnosis, and treatment, and to describe the associated morbidity/mortality of infected patients.</p> <p><b>Methods:</b> This was a retrospective chart review of high-risk burn patients (<math>\geq 20</math> percent total body surface area [%TBSA] and/or facial burns) who had HSV titers (IgG and IgM) drawn between September 2015 and April 2018. Titers were drawn for screening purposes in patients with a high clinical suspicion for developing an active infection. Serum HSV titers (HSV-1 IgG, HSV-2 IgG, and HSV-1,2 IgM) and outcomes including hospitalization and burn intensive care unit (BICU) length of stay (LOS) were compared between patients with HSV titers who developed active infection and those who did not. Active infection was determined by the attending physician based on development of vesicular lesions. Data is reported in median (IQR).</p> <p><b>Results:</b> A total of 56 patients had serum HSV titers measured. Of those, 29 patients (52%) developed clinical signs of an active HSV infection; 2 patients had possible lesions upon titer measurement. The majority of patients who developed an active HSV infection suffered facial/neck burns (28/29; 97%). Median burn size was 20 (8.5-52.5) %TBSA in patients who developed an HSV infection, compared to 24 (20-34) %TBSA in those who did not develop infection (<math>p=0.95</math>). In the active infection group, median HSV-1,2 IgM titers were significantly higher than in the no infection group (0.71 [0.44-1.1] vs. 0.52 [0.34-0.74], <math>p=0.02</math>). Median HSV-1 IgG (19 [0.89-37] in active</p>

infection vs. 17 [0.48-33] in no infection,  $p=0.65$ ) and HSV-2 IgG titers (0.22 [0.08-0.97] in active infection vs. 0.10 [0.07-5.6] in no infection,  $p=0.97$ ) demonstrated no statistical significance between the two groups. Development of an active infection did not affect the duration of hospitalization (27 [9.5-40] days in active infection vs. 20 [8.0-28] days in no infection,  $p=0.17$ ) or length of BICU stay if admitted to the BICU (26 [13-49] days in active infection vs. 19 [11-27] days in no infection,  $p=0.09$ ). There was no difference in in-hospital mortality between groups.

**Conclusions:** Increased serum HSV-1 and 2 IgM titer levels are associated with an increased risk of developing active HSV infection in high-risk burn patients. IgG titers demonstrated no correlation with development of active infection. Although HSV infection may complicate patient care and burn recovery, development of an active infection did not correlate with increased duration of BICU and hospital LOS, nor in-patient mortality. The role of HSV titers in screening and decision making needs to be further characterized in larger studies.

**Disclosure:**

Phillip G. Brennan – No Relevant Financial Relationships to Disclose  
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Kaitlin M. Alexander – No Relevant Financial Relationships to Disclose  
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