Prevalence and clinical presentation of cutaneous herpesvirus infections in the inpatient setting: a cross-sectional, single-institutional study

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Introduction

- Cutaneous human herpesvirus (HHV) infections have a wide spectrum of cutaneous manifestations.
- Lesion morphology and distribution may vary in primary versus reactivation stage of disease and is impacted by the patient's immune status.
- Reactivation triggers include stress, fever, UV exposure, and immunosuppression.
-These infections may complicate hospital stays, increase morbidity, and present a diagnostic challenge.
- The primary objective of this cross-sectional analysis was to characterize the prevalence, clinical presentation and co-morbidities of inpatient herpesvirus infections.

Methods

- Retrospective electronic medical record review at an academic medical center from August 2018 to August 2019.
- All HSV/VZV polymerase chain reaction skin tests performed during this interval were included.
- Primary versus recurrent infection status, primary lesion morphology and distribution were recorded.

Results

- A total of 117 patients were identified and included.
- 57 patients had HSV-1, 38 had HSV-2, and 23 had VZV.

Table 1. Type of outbreak.

HSV-1		HSV-2		VZV	
Primary	4 (7%)	Primary	1 (3%)	Primary	3 (13%)
Recurrent	44 (77%)	Recurrent	30 (79%)	Herpes zoster	10 (43%)
Eczema herpeticum	4 (7%)	Neonatal	2 (5%)	Disseminated zoster	10 (43%)
Herpetic sycosis	1 (2%)	Unknown	5 (13%)		
Unknown	4 (7%)				

Results (continued)

Table 2. Reason for admission and consult.

	HSV-1	HSV-2	VZV	Total
Primary reason for admission				
HSV/VZV	13 (23%)	4 (11%)	15 (65%)	32 (27%)
Other	44 (77%)	34 (89%)	8 (35%)	86 (73%)
Reason for dermatology consult				
HSV or VZV	6 (11%)	3 (8%)	8 (35%)	17 (14%)
Blisters/bullae/ ulcers/pustules with unclear etiology	6 (11%)	7 (18%)	3 (13%)	16 (14%)
Rash with unclear etiology	5 (9%)	4 (11%)	4 (17%)	13 (11%)
Unrelated diagnosis (HSV/VZV was incidental finding)	10 (18%)	8 (21%)	2 (9%)	20 (17%)
Not seen by dermatology	30 (53%)	16 (42%)	6 (26%)	52 (44%)

Table 3. Location of lesions.

	HSV-1	HSV-2	VZV	Total
Head/neck	49 (86%)	6 (16%)	8 (35%)	63 (53%)
Upper extremity	1 (2%)	0 (0%)	11 (48%)	12 (10%)
Lower extremity	1 (2%)	3 (8%)	10 (43%)	14 (12%)
Trunk	1 (2%)	7 (18%)	15 (65%)	23 (19%)
Groin	5 (9%)	14 (37%)	1 (4%)	20 (17%)
Buttocks	2 (4%)	18 (47%)	7 (30%)	27 (23%)
Acral	2 (4%)	1 (3%)	1 (4%)	4 (3%)

Table 4. Patient risk factors.

	HSV-1	HSV-2	VZV	Total
Immunosuppressive medications	26 (46%)	16 (42%)	9 (39%)	51 (43%)
Hematopoietic stem cell transplant	4 (7%)	1 (3%)	2 (9%)	7 (6%)
Solid organ transplant	5 (9%)	1 (3%)	0 (0%)	6 (5%)
Presence of GVHD	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Pregnancy	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Connective tissue disease	0 (0%)	1 (3%)	2 (9%)	3 (3%)
HIV/AIDS	3 (5%)	7 (18%)	1 (4%)	11 (9%)
Inherited immunodeficiency	1 (2%)	0 (0%)	0 (0%)	1 (1%)
Hematologic malignancy	14 (25%)	6 (16%)	6 (26%)	26 (22%)
Solid malignancy	3 (5%)	5 (13%)	3 (13%)	11 (9%)
Radiation	0 (0%)	1 (3%)	1 (4%)	2 (2%)
Diabetes mellitus	9 (16%)	12 (21%)	5 (22%)	26 (22%)

Figures A-I. Patient photos representing various lesion morphologies and location of disease involvement.

Results (continued)

Table 5. Characterization of lesions.

HSV-1	
Ulceration/erosion	22 (39.3%)
Crusted ulceration/erosion	17 (30.4%)
Crusted erythematous papules	7 (12.5%)
Clustered vesicles on an erythematous base	3 (5.4%)
Clustered vesicopustules	1 (1.8%)
Ulcerated nodule	1 (1.8%)
Erythematous papules	1 (1.8%)
Erosive hemorrhagic stomatitis	1 (1.8%)
Crusted erosion	1 (1.8%)
Punched out erosion	1 (1.8%)
Crusted plaque	1 (1.8%)
HSV-2	
Clustered vesicles on an erythematous base	14 (35.9%)
Ulcer	10 (26.5%)
Ulceration/erosions	8 (20.5%)
Erosions	4 (10.3%)
Vesicopustules on an erythematous base	1 (2.6%)
Large plaque studded with vesicles	1 (2.6%)
Erythematous macules	1 (2.6%)
VZV	
Dermatomal papules, vesicles, or pustules with erythematous base	8 (34.8%)
Disseminated vesicles, pustules, and/or crusted papules with erythematous base	7 (30.4%)
Scalloped crusted erosions or ulcers	4 (17.4%)
Plaque studded with vesicles, bullae, and/or scalloped erosions	3 (13.0%)
Hypopigmented lesions	1 (4.3%)

Conclusions

-A wide spectrum of clinical presentations and lesion morphologies may be seen in the setting of HHV infections in the inpatient setting.
- A significant proportion of infections (30.8%) were identified as an incidental findings by dermatology consult services
- A significant proportion of patients (55%) had underlying immunosuppressive state.
- Increased vigilance and low threshold for testing in this patient population may improve diagnostic accuracy.

References

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