Risk Factors for Herpes Zoster: a Systematic Review and Meta-Analysis

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Citation

Published Version
doi:10.1093/ofid/ofx163.733

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Conclusion. Cytokines, chemokines, and other inflammatory mediators function in a manner, acting on many different cell types to regulate the host's immune response. When cytokines present in high concentrations, they might toxic or even lethal effects. In severe cases, cytokine levels in patients who had severe CCHF were significantly higher serum levels of TNF-alpha (68.2 ± 23.5; P = 0.008) and IL-6 (73.1 ± 41.6; P = 0.003) were detected, compared with cytokine levels in patients who had moderate CCHF (Table 1). No differences in serum IL-10 and IFN-gamma levels between patients who had severe CCHF and those who had moderate CCHF were detected (P > 0.05).

Table 1: Cytokine levels, demographic and laboratory characteristics in patients with severe and mild/moderate cases of CCHF.

<table>
<thead>
<tr>
<th>Features</th>
<th>Severe cases (n = 46)</th>
<th>Mild/moderate cases (n = 46)</th>
<th>Pvalue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>50.6 ± 20.3</td>
<td>49.8 ± 21.0</td>
<td>0.682</td>
</tr>
<tr>
<td>Female gender, 31(67.4)</td>
<td>63 (88.3)</td>
<td>0.291</td>
<td></td>
</tr>
<tr>
<td>n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TNF</td>
<td>68.2 ± 23.5</td>
<td>41.3 ± 17.4</td>
<td>0.008</td>
</tr>
<tr>
<td>IL-6</td>
<td>73.1 ± 41.6</td>
<td>38.0 ± 19.5</td>
<td>0.003</td>
</tr>
<tr>
<td>IL-10</td>
<td>6.2 ± 1.3</td>
<td>6.21 ± 1.4</td>
<td>0.753</td>
</tr>
<tr>
<td>IFN-gamma</td>
<td>145 ± 96</td>
<td>126 ± 92</td>
<td>0.664</td>
</tr>
<tr>
<td>WBC</td>
<td>2386 ± 5,602</td>
<td>2,275 ± 1,286</td>
<td>0.280</td>
</tr>
<tr>
<td>PLT</td>
<td>53,564 ± 36,520</td>
<td>98,065 ± 42,768</td>
<td>0.001</td>
</tr>
<tr>
<td>CRP</td>
<td>3.2 ± 2.6</td>
<td>4 ± 1.4</td>
<td>0.005</td>
</tr>
<tr>
<td>ALT</td>
<td>521 ± 482</td>
<td>408 ± 320</td>
<td>0.044</td>
</tr>
<tr>
<td>AST</td>
<td>809 ± 1,182</td>
<td>526 ± 215</td>
<td>0.106</td>
</tr>
<tr>
<td>CPK</td>
<td>1,138 ± 970</td>
<td>676 ± 835</td>
<td>0.007</td>
</tr>
<tr>
<td>LDH</td>
<td>1,800 ± 1,254</td>
<td>589 ± 271</td>
<td>0.002</td>
</tr>
</tbody>
</table>

Results. EV RNA was detected in 103 (17.6%) of 586 stool specimens by real-time RT-PCR targeting the highly conserved 5' UTR region. Out of them, 71 (12.11%) were NPEV, partially sequenced by VP1 which revealed the presence of echovirus (ECV) 19 (n = 6), ECV 11 (n = 7), ECV 18 (n = 4), ECV 33 (n = 5), ECV 29 (n = 1), ECV 25 (n = 2), ECV 24 (n = 3), ECV 3 (n = 3), ECV 14 (n = 2), ECV 13 (n = 1), ECV 2 (n = 1), ECV 22 (n = 2), ECV 27 (n = 2), ECV 21 (n = 1), ECV 6 (n = 2), CV A10 (n = 2), CV A9 (n = 1), CV A6 (n = 2), CV B4 (n = 1), CV B5 (n = 3), CV B6 (n = 3), EV 80 (n = 1), EV 83 (n = 1), EV 97 (n = 2).

Total 63 (10.75%) HBoVs were detected by real-time PCR which were further sequenced by VP1, which consists of HBoV-1 (n = 8), HBoV-2 (n = 15), HBoV-3 (n = 9) and HBoV-4 (n = 5). Out of them 9 (1.5%) were detected as col infection with NPEVs. Phylogenetic analysis showed 0.9 - 5.6% divergence at nucleotide level among HBoVs. Total 9 (1.5%) saffold viruses was detected and characterized by VP1 sequencing. EV RNA was detected in 103 (17.6%) of 586 stool specimens by real-time RT-PCR targeting the highly conserved 5' UTR region.

1035. Frequency of Epstein–Barr Virus Genotypes in Pakistani Tranagender SexWorkers

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Background. Transgender community large association with sex work has put them at a greater risk of contracting sexually transmitted infections (STIs). The aim of this study was to investigate the prevalence of Epstein–Barr Virus (EBV) genotypes in transgender sex workers (TSWs). The high prevalence of EBV-2 genotype in sex workers has been previously reported. EBV genotypes were investigated in transgender sex workers to find out EBV-2 occurrence in Pakistani population.

Methods. A total of 86 transgender (Hijras) sex workers were randomly included in this study. Demographics, including age, the number of sex partners, sexual habits, and awareness about protective methods were obtained. Blood was collected from all subjects and the presence of Human Immunodeficiency Virus, Hepatitis B and C virus were determined by antibody strip testing. EBV detection and genotyping were performed by extracting genomic DNA from all available blood samples. B-globin and EBNA-1 were amplified to assess the quality and presence of EBV DNA. Analysis of EBNA-2 genotyping was done by nested PCR.

Results. HIV was the most prevalent infection in 40 transgender sex workers (46.51%) followed by HCV in 15 (17.4%). Among HIV-serialized TSWs, EBV genotypic determination was only achievable in 60% of cases, where 62.5% were EBV-1, 29.16% of EBV-2 and co-infection was found in 8% samples. Among HIV-negative individuals, 78% were EBV-1, whereas EBV-2 genotype and co-infections were absent. All non-typable samples were amplifiable for the EBNA-1 gene in both populations, confirming EBV genome in the samples.

Conclusion. EBV-1 was the most common genotype of EBV in HIV seropositive and seronegative TSWs but the high occurrence of EBV-2 and co-infection of both types was observed only in HIV seropositive individuals. This is the first report of frequency of EBV infections in the HIV-positive transgender community of Pakistan.

Disclosures. All authors: No reported disclosures.
associated with a modest increased risk of HZ (pooled RR = 1.14; 95% CI: 1.11, 1.17). Recent physical trauma increased risk of HZ by almost two-fold (pooled RR = 2.56; 95% CI: 1.97, 3.33).

Conclusion. In addition to age and immunocompromised conditions, our review shows that female sex, race/ethnicity, family history, and comorbidities are risk factors for HZ. Efforts are needed to better understand risk factors and to increase the uptake of zoster vaccination.

Disclosures. B. P. Yawn, GSK: Consultant and Scientific Advisor, Consulting fee

1037. Herpes–Zoster Infection in a Tertiary Hospital in Brazil
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Session: 139. Adult Viral Infection
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Background. Herpes zoster (HZ) is a common infection with potential complications requiring hospital care, especially for patients with multiple comorbidities. However, there is little information on HZ from hospital registries.

Methods. We searched for hospital-based records of B02 code (ICD-10) between March 2000 and January 2017 at Hospital de Clinicas de Porto Alegre, a tertiary, university hospital in south Brazil. To avoid misclassifications, we considered clinical evaluation for the diagnosis of cutaneous HZ and postherpetic neuralgia (PHN), ophthalmological evaluation for opthalmic HZ and the combination of clinical, radiologic and cerebrospinal fluid analysis for HZ meningo-encephalitis (ME). We analyzed conditions associated with immune dysregulation, complications, length of hospital stay, and mortality. Chi-square test and Kaplan-Meier estimator were used for statistical analyses. P < 0.05 was considered statistically significant.

Results. There were 847 records for this period, of which 801 were confirmed according to our criteria and included in the analysis. Most patients were women (n = 448; 60%), with an average of 48.8 years, standard deviation of 22.2. There were more diagnoses in the inpatients group (74.4%), and fewer in the emergency room (22.2%) and outpatient (3.3%). The median length of hospital stay was 7 days (2-10, IQR=7-15) when HZ was the main reason for admission. Most patients presented cutaneous HZ (n = 743, 92.8%). There were fewer cases of PHN (6.1%), ophthalmic HZ (7.6%), and ME (4.1%). Seventy percent had some kind of immune dysregulation; more frequently AIDS (31%), use of immunosuppressive agents (18.7%) and malignant disease (16.2%). We followed the subjects for a median of 28.2 (2.8-77.5) months. During this period, there were 105 (13.1%) deaths. Five were related to HZ ME. The 30-day overall mortality rate was 1.5%. There was no statistical difference in cumulative survival (graph 1, P = 0.05) or incidence of complicated forms for patients with or without immune dysregulation.

Conclusion. Our sample was characterized by a majority of inpatient diagnoses. The 30-day mortality rate was lower than reported in similar studies, but there was a relevant impact of complicated forms in mortality and sequelae.


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Background. The Canadian Immunization Research Network (CIRN) enrolled adults hospitalized with acute respiratory illness across Canada. Nasopharyngeal swabs (NPS) from influenza cases were tested for strain characterization using real-time reverse transcriptase polymerase chain reaction (rtRT-PCR). A primary assay assay for influenza A and B viruses. Subsequently, influenza A viruses were subtyped as H1N1 or H3N2, and influenza B lineages were differentiated as Victoria or Yamagata. Laboratory results were compared with patient demographic data and clinical outcomes.

Results. Over three consecutive influenza seasons, 3394 cases of hospitalized acute respiratory illness were laboratory-confirmed as influenza. At 72.4%, influenza A was predominant across all seasons, while influenza B caused 27.6%. Most of the influenza A cases were due to H3N2 (58.7%), while H1N1 accounted for 41.3%. For influenza B, the Yamagata lineage was predominant at 88.6% whereas the Victoria lineage accounted for 11.6%. Outcome analyses are presented for each influenza A subtype and influenza B lineage, overall and per season. Considering serious outcomes in patients ≥65, higher proportions of patients hospitalized with the H1N1 strain experienced intensive care unit (ICU) admission and need for mechanical ventilation, while higher proportions of patients hospitalized with B/Yamagata and H3N2 died within 30 days of admission.

Conclusion. Comprehensive collection of surveillance data paired with NP specimens by the CIRN SOS Network was conducive to broader understanding of influenza strain activity and associated outcomes at the subtype and lineage level. This data is important to make informed recommendations for the use of multicomponent influenza vaccines.

Disclosures. All authors: No reported disclosures.

1039. Co-circulation of Influenza A and B During the 2016–2017 Influenza Season at Rush University Medical Center
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Background. Influenza virus activity varies seasonally and within season. Epidemiology of serious influenza outcomes is contingent on the prevalent circulating strain’s and susceptible age group/s. Given the strain variability over the years, from 2013 through 2017, we searched for hospital-based records of B02 code (ICD-10) between March 2000 and January 2017 at Hospital de Clinicas de Porto Alegre, a tertiary, university hospital in south Brazil. To avoid misclassifications, we considered clinical evaluation for the diagnosis of cutaneous HZ and postherpetic neuralgia (PHN), ophthalmological evaluation for ophthalmic HZ and the combination of clinical, radiologic and cerebrospinal fluid analysis for HZ meningo-encephalitis (ME). We analyzed conditions associated with immune dysregulation, complications, length of hospital stay, and mortality. Chi-square test and Kaplan-Meier estimator were used for statistical analyses. P < 0.05 was considered statistically significant.

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