CONCLUSION

Presence of HP and EBV infection evaluated by qPCR define four groups with different features and survival.

A total of 295 patients were studied with a mean age 62.7 years and predominance of males (51.8%). Intestinal-mixed histological subtype (IMH) rate was 54.2% in cases. Most frequent clinical stage was III-IV (58.1%). Results found HP in 75.9% (n=224) and EBV in 16.3% (n=48) of the population. High viral load EBV was found in 40% (n=6/15) cases. Co-infection detection rate was 11% (n=32/295) and there were a trend to co-infection (p=0.09). Cases were defined in 4 groups: HP+EBV+ (n=32), HP+EBV- (n=192), HP-EBV+ (n=16), and HP-EBV- (n=55) with different features respectively. However, there were not association for age (p=0.146), clinical stage (p=0.622), histologic grade (p=0.103) or histological subtype (p=0.224) (Table 1). EBVaGC was associated to longer OS (70.8% vs 79.8%) at 1 year, p=0.026 (Figure 2), and high viral load had a trend to have even longer survival (p=0.39). Based on a mean follow-up of 24 months, the 1-year survival was lower in EBV+ [71.9% (HP+ EBV+) and 68.8% (HP- EBV+)] than in EBV- [79.7% (HP+ EBV-) and 80% (HP- EBV-)] groups.

INTRODUCTION

Gastric cancer (GC) is the second most common cancer and first leading cause of cancer-related deaths in Peru. Epstein-Barr virus (EBV) has been shown to be associated with GC. Infection by Helicobacter pylori (HP) is widely spread in the Peruvian population that causes chronic and progressive gastric mucosal inflammation and is responsible for the gastric inflammation-associated diseases, GC and peptic ulcer disease. However, it is not currently clear what official statistics indicate the prevalence of this pathogens in patients with GC in Peru, as well as the virulence factor-related in relative risk of disease. The aims of this study were to evaluate HP and EBV-associated GC (EBVaCG), to assess the prevalence rate and to define the characteristics of Peruvian patients.

METHODS

GC samples were prospectively collected from patients who underwent gastroscopy or surgical resection with no preoperative treatment at INEN between 2015 and 2017. Tumor tissue (T), proximal healthy tissue (P) and distal healthy tissue (D) samples were assessed for HP and EBV by quantitative PCR (qPCR) and standard methods of detection (Figure 1). HP+ patients were determinate with at least one ureA/hspA gene result in at least one region (T, P or D samples) and EBV+ patients were divided in high viral load (>100 copy/ul) and low viral load (<100 copy/ul) groups. HP and EBV status were analyzed along with clinicopathologic parameters of the tumor. Kaplan-Meier estimation curves overall survival (OS) was applied.

Sample Processing

Figure 1. DNA extraction and quantification of GC samples-Detection of HP and EBV by qPCR.

Figure 2. Overall survival curve in EBVaGC.

Table 1. HP/EBV cases with different features respectively.

<table>
<thead>
<tr>
<th></th>
<th>HP+EBV+</th>
<th>HP+EBV-</th>
<th>HP-EBV+</th>
<th>HP-EBV-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (years)</td>
<td>66.3</td>
<td>61.4</td>
<td>67.4</td>
<td>64</td>
</tr>
<tr>
<td>III-IV Stage</td>
<td>62.9%</td>
<td>55.3%</td>
<td>68.8%</td>
<td>61.5%</td>
</tr>
<tr>
<td>Histologic GrII</td>
<td>39.3%</td>
<td>47.2%</td>
<td>66.6%</td>
<td>33.3%</td>
</tr>
<tr>
<td>IMH Subtype</td>
<td>55.2%</td>
<td>52.0%</td>
<td>80.0%</td>
<td>53.2%</td>
</tr>
<tr>
<td>Lower survival</td>
<td>71.9%</td>
<td>79.7%</td>
<td>68.8%</td>
<td>80.0%</td>
</tr>
</tbody>
</table>

This study was supported by CIENCIACTIVA-CONCYTEC #196-2015-FONDECYT

Instituto Nacional de Enfermedades Neoplásicas
PhD Carolina Belmar-Lopez
Research Department
Av. Angamos Este 2520-Surquillo, Lima, Peru
E-mail: cbelmar.lopez@gmail.com
Phone: (511) 201-6500 ext 3040
Web: http://portal.inen.sld.pe