Hepatitis B in South Florida

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Financial Relationships/ Commercial Interests

• Advisory Committee for the Hepatitis B Foundation Liver Cancer Disparities Project
Goals of the Presentation

• Explain the epidemiology of HBV-related hepatocellular carcinoma in South Florida
• Present results from two community-based HBV projects
• Discuss plans for future community-based HBV screening and educational efforts.
Chief Complaint: Abdominal Pain

• 42 year-old Haitian man was in his usual state of health until he developed fever.

• The fever persisted and he had abdominal pain. He was noted to have a large liver mass (7 cm in size).

• One month later, CT scan with contrast found a 13 cm mass concerning for cancer.

• Risk Factors:
  • Never had a blood transfusion, surgery or tattoos.
  • Denies using intravenous drugs or intranasal cocaine.
  • He has never been tested for viral hepatitis
Family History:

- His father died of liver cancer 14 years prior
  - Diagnosed when he was in his 70s.

- At one point, the patient was told to wear gloves when caring for his father.

- He does recall receiving the hepatitis B vaccines before emigrating to the US from Haiti.

- He has children, ages 9 and 13, who were born in the US. They are healthy with no hepatitis B.

- His wife was likely tested during pregnancy, but he is unsure of the result.
Treatment Course (2016):

• Y-90 could not be performed due to shunt fraction of 30%
• TACE to right hepatic artery
• Portal vein embolization to attempt to grow left lobe for resection
  • Left lobe did not grow and tumor progressed to invade the portal vein
• Patient declined Sorafenib
• Inquired about clinical trial here and at Moffitt but did not qualify
• Transitioned to Hospice and died 10 months after diagnosis
Hepatitis B is highly relevant in our catchment area
- Intermediate Endemicity: 2-7% HbsAg Prevalence
- High Endemicity ≥ 8% HbsAg Prevalence

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of studies</th>
<th>Number of participants</th>
<th>Prevalence estimates (% 95% CI)</th>
<th>Population size per country</th>
<th>HbsAg-positive population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Argentina</td>
<td>11</td>
<td>3549159</td>
<td>0.77% (0.67-0.87)</td>
<td>40374224</td>
<td>312805</td>
</tr>
<tr>
<td>Barbados</td>
<td>1</td>
<td>500</td>
<td>1.40% (0.67-2.91)</td>
<td>280396</td>
<td>3926</td>
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<tr>
<td>Belize</td>
<td>5</td>
<td>2231</td>
<td>4.71% (3.90-5.67)</td>
<td>308595</td>
<td>14524</td>
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<tr>
<td>Bolivia</td>
<td>4</td>
<td>1357</td>
<td>0.44% (0.20-0.98)</td>
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<td>44908</td>
</tr>
<tr>
<td>Brazil</td>
<td>108</td>
<td>3898502</td>
<td>0.6% (0.65-0.66)</td>
<td>195210154</td>
<td>1725813</td>
</tr>
<tr>
<td>Canada</td>
<td>25</td>
<td>498814</td>
<td>0.76% (0.74-0.79)</td>
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<tr>
<td>Chile</td>
<td>2</td>
<td>1179</td>
<td>0.68% (0.34-1.35)</td>
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<tr>
<td>Colombia</td>
<td>5</td>
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<td>2.29% (1.86-2.82)</td>
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<td>Costa Rica</td>
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<tr>
<td>Cuba</td>
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<tr>
<td>Dominican Republic</td>
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<td>489</td>
<td>4.05% (2.65-6.25)</td>
<td>1001679</td>
<td>409685</td>
</tr>
<tr>
<td>Ecuador</td>
<td>1</td>
<td>500</td>
<td>2.00% (1.08-3.68)</td>
<td>1500107</td>
<td>300021</td>
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<tr>
<td>Guatemala</td>
<td>1</td>
<td>12668</td>
<td>0.22% (0.15-0.32)</td>
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<td>31699</td>
</tr>
<tr>
<td>Haiti</td>
<td>2</td>
<td>155</td>
<td>13.56% (9.00-19.89)</td>
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<tr>
<td>Jamaica</td>
<td>3</td>
<td>825</td>
<td>3.76% (2.65-5.29)</td>
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<td>103013</td>
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<tr>
<td>Mexico</td>
<td>32</td>
<td>787039</td>
<td>0.20% (0.16-0.21)</td>
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<td>Nicaragua</td>
<td>2</td>
<td>1452</td>
<td>0.55% (0.28-1.10)</td>
<td>5822009</td>
<td>32078</td>
</tr>
<tr>
<td>Panama</td>
<td>3</td>
<td>6493</td>
<td>1.68% (1.39-2.02)</td>
<td>3678128</td>
<td>61746</td>
</tr>
<tr>
<td>Peru</td>
<td>18</td>
<td>18213</td>
<td>2.10% (1.90-2.32)</td>
<td>7926839</td>
<td>615366</td>
</tr>
<tr>
<td>Suriname</td>
<td>2</td>
<td>1253</td>
<td>3.91% (2.97-5.14)</td>
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<td>20529</td>
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<tr>
<td>USA*</td>
<td>4</td>
<td>112505</td>
<td>0.27% (0.24-0.30)</td>
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<tr>
<td>Venezuela</td>
<td>15</td>
<td>138249</td>
<td>0.48% (0.44-0.52)</td>
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<td>139283</td>
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<tr>
<td>Total</td>
<td>248</td>
<td>9043217</td>
<td>0.81% (0.81-0.81)</td>
<td>937089025</td>
<td>7622334</td>
</tr>
</tbody>
</table>

Countries in Region of the Americas where no eligible reports on HBV reporting HbsAg were available were: Antigua and Barbuda, The Bahamas, Dominica, El Salvador, Grenada, Guyana, Honduras, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, and Uruguay. *Of the 420 articles for the USA that were full text reviewed, four entailed original NHANES data for HbsAg and fulfilled the eligibility criteria of this systematic review and were hence included.

Table 2: HbsAg seroprevalence and the number of people living with chronic HBV in the general population in the WHO Region of the Americas

Schweitzer A et al. Lancet. 2015
Epidemiology of HBV-Related HCC in South Florida

Retrospective Analysis of 901 patients with HCC treated from 2004-2014

Stratified by race, median survival in days was 425 in Blacks, 570 in Asians, 652 in Hispanics, 904.5 in Whites, and 928 in others, statistically significant when comparing Blacks to Whites, p < 0.01, Blacks to Hispanics, p < 0.03, and Hispanics to Whites, p < 0.01.

What did we learn?

• South Florida presents a unique population for study. In our sample, Hispanics were born in twenty-three and Blacks in seventeen different countries.

• Patients born in the Caribbean had a 39% higher rate of death after HCC diagnosis, when compared to those born in North America, \( p < 0.01 \).

• Haitian Blacks lived only 173 days compared to US-born Blacks, 521 days, and other Blacks, 523 days, \( p 0.02 \).

Questions

1. Do healthcare providers know and understand risk factors for hepatitis B?
2. Are healthcare providers screening patients at risk for HBV?
3. Are healthcare providers screening HBV patients at risk for HCC?
4. Are people in the community aware of their HBV risk?
Do healthcare providers know and understand risk factors for HBV?

- We surveyed 183 trainees
  - 35% Hispanic, 29% White, 18% Asian, and 9% Black
  - Internal Medicine, 71%; Family Medicine, 11%; Infectious Diseases, 6%; and Gastroenterology, 7%.

- Only 59% correctly estimated national HBV prevalence.

- In vignettes with behavioral risk factors, trainees correctly advised screening, 63–96%.

- When the risk factor was the birthplace, correct responses ranged from 33 to 53%.

- Overall, 45% chose an incorrect combination of HBV screening tests.

Are healthcare providers screening patients at risk for HBV?

- Using research informatics, we identified Black patients with at least two physical examinations from 1/1/2011-5/18/2016.
  - We included patients living in zip codes with the largest Haitian populations in our catchment area.

- We identified 301 potentially eligible subjects.
  - We determined that 46.5% of the sample was likely Haitian by search of the medical record.

- Only 27.9% had hepatitis B surface antigen (HBsAg) performed
  - 2.6% of those tested were seropositive.

- 32.5% of patients who were definitely Haitian were tested compared to 30.2% of those likely Haitian, 24.6% of those for whom Haitian nationality could not be confirmed, and 28.6% of those who were definitely not Haitian.
Are healthcare providers screening HBV patients at risk for HCC?

• The sample was 30.5% Black, 21.5% non-Hispanic White, 22.1% Hispanic, 20.3% Asian and 5.6% “Other”.

• Over 95% of HBV patients were seen in Hepatology clinic; most had at least four visits.

• Ultrasound was ordered at least once in 87.3% of patients and completed in 87.2% where ordered.
  • In 39.9%, CT scan was ordered at least once with completion rate of 89.3%.
  • In 24.1%, MRI was ordered at least once with completion rate of 87.8%.

• There were no imaging results for 16.1% overall, 6.3% of cirrhosis patients vs. 18.6% of those without cirrhosis, \( p < 0.01 \).

• During the study period, HCC was diagnosed in 4.4%.
Are people in the South Florida Haitian community aware of their HBV risk?
A Mixed-Methods Approach to Understanding Perceptions of HBV and HCC among ethnically diverse Black communities in South Florida

• We conducted ten focus groups (n = 55) in Creole or English and stratified groups by birthplace (Haiti vs. US), gender and HBV infection.

• Participants completed a baseline questionnaire and the Short Assessment of Health Literacy (SAHL-E).

• There was lack of awareness that HBV and HCC disproportionately affect Blacks.

• Many participants confused HBV with human immunodeficiency virus (HIV) infection.

• Median health literacy was low in all groups, except US-born Black women.

Additional Results

• As expected, HBV+ participants were more knowledgeable about HBV and HCC.
  • However, many HBV+ participants were unsure of the cause of infection, e.g. modes of transmission.
  • Among HBV+ participants, inadequate education and suboptimal physician-patient communication emerged as themes.
  • Of the 31 potential participants with confirmed HBV who declined participation, eight believed they could not participate because they did not have HBV.

• US-born participants knew more about signs and symptoms of HBV, cirrhosis, and HCC

• Haitian participants more often attributed disease to supernatural causes.

• Participants in each group expressed that fear and mistrust of the medical community combined with denial may lead persons to avoid seeking care for liver disease until it is already advanced.

Additional Results:

• In both groups, there are misconceptions about HBV transmission and limited knowledge of the link of HBV to HCC.

• Though HBV infection is endemic in Haiti, awareness is low.

• Stigma, limited healthcare access and low health literacy may limit HBV detection, leading to increased HCC incidence.
Suggestions for Improvement:

• Leverage existing health fairs, maintaining confidentiality to avoid stigma.

• Community outreach using mobile screening units/teams and home-based screening.

• Educational sessions targeted to various age groups, as young as middle school, could improve overall community knowledge.

• Participants highlighted the importance of a community spokesperson, e.g., pastors, coaches, athletes, or local politicians, to bring visibility and lend credibility to the need for HBV screening.

Acceptability and Feasibility of Home-Based Hepatitis B Screening Among Haitian Immigrants

Top Reasons Community Members Might Find Home/Community-Based HBV Unacceptable

<table>
<thead>
<tr>
<th>Reason</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fear of needles</td>
<td>43 (71.7)</td>
</tr>
<tr>
<td>Do not want to have blood drawn</td>
<td>33 (55.0)</td>
</tr>
<tr>
<td>A larger financial incentive might be needed</td>
<td>21 (35.0)</td>
</tr>
<tr>
<td>Lack of clarity regarding the need for testing</td>
<td>18 (30.0)</td>
</tr>
<tr>
<td>Fear of receiving positive results*</td>
<td>9 (15.0)</td>
</tr>
<tr>
<td>Saliva test would be preferable</td>
<td>9 (15.0)</td>
</tr>
<tr>
<td>Fingerstick test would be preferable</td>
<td>7 (11.7)</td>
</tr>
</tbody>
</table>

*Represents 5 people

Community Members are at High Risk for HBV Infection

Screening is necessary. Screening was feasible. Screening was acceptable.

Discussion of Next Steps

Scale up community-based efforts.
Acknowledgements:

Mentors/Co-investigators/Research Assistants
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Sylvester Comprehensive Cancer Center Office of Community Outreach and Engagement