Improving Outcomes for Hispanic Patients Undergoing Peginterferon/Ribavirin Therapy for Chronic Hepatitis C in an Internist-led, Multidisciplinary, Multi-cultural Practice: A Unique Application of the Medical Home Model

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Joseph L Yozviak DO, FACP, Orlando J Penaloza MD, FACP, Judith Knoop LCSW, Judith Lash ACRN
What is the Natural History of Hepatitis C Infection?
Natural History of Chronic Liver Disease

Chronic liver disease → Compensated cirrhosis → Decompensated cirrhosis → Death

Development of complications:
- Variceal hemorrhage
- Ascites
- Encephalopathy
- Jaundice
# Median Survival in Cirrhosis

- **Compensated Cirrhosis**  
  9 yrs

- ** Decompensated Cirrhosis**  
  - Jaundice
  - Encephalopathy
  - Ascites
  - Variceal hemorrhage
  1.6 yrs

- **Hepatopulmonary syndrome**  
  10 mos

- **Spontaneous bacterial peritonitis**  
  9 mos

- **Hepatorenal syndrome**  
  - Type 1  
    - 6 mos
  - Type 2  
    - 2 wks
The Term “Minority"

- In socioeconomics, typically refers to a socially ethnic group (understood in terms of language, nationality, religion and/or culture).

- Other minority groups include people with disabilities, "economic minorities" (working poor or unemployed).
Health Disparities/Healthcare Inequality

- Refers to gaps in the quality of health and health care across racial, ethnic, sexual orientation and socioeconomic groups.
Current Situation

- There are an estimated 40 million Latinos living in the United States.

- By the year 2050, it is estimated that Latinos will comprise 25% of the U.S. population, which makes Latinos the largest and fastest growing minority group in the U.S.
Current Situation

- The prevalence of hepatitis C (HCV) among Latinos is estimated at **2.1%**

- Which is **significantly higher** than the estimated prevalence of 1.8% in the general population, and the 1.5% in the non-Latino Caucasian population.

Current Situation

- There are however many factors that could affect diagnosis, disease progression and treatment outcomes in Latinos
Current Situation

- Latinos with hepatitis C virus (HCV) infection have more rapid progression of fibrosis and decreased response to anti-HCV treatment.¹
- The high rates of metabolic syndrome, insulin resistance, and hepatic steatosis, as well as genetic differences, may explain the severity of chronic hepatitis C (CHC) in this population.²

Current Situation

- In addition, Latinos encounter substantial barriers to medical care.

- Including language, cultural differences, and socioeconomic factors such as lack of medical insurance.
Who We Are

- Largest academic community hospital in PA
- Largest Level 1 Trauma Center in PA
- Certified Stroke Center
- Employees – 9,656
  Medical Staff – 1,100+
  Nurses – 2,334

- Magnet Hospital
- 154,792 ED visits /
  63,743 admissions
- 988 acute care beds
- 3 hospital campuses
- Revenues over $1 Billion

Cedar Crest  17th Street  Muhlenberg  8 Health Centers
Who We Are

- Our network maintains a strong academic presence with **15 free standing, fully accredited training programs**.

- The not-for-profit network has a **major affiliation** with the University of South Florida as well as a long-standing affiliation with Penn State College of Medicine/Hershey Medical Center.
Who We Are

- The Lehigh Valley
  - Allentown
  - Bethlehem
  - Easton

- Located 1 hour north of Philadelphia and 1.5 hours west of New York City.

- Third largest metropolitan region in PA
  - Population ~816,000
Learning Objectives

- Demonstrate the multiple factors influenced by race and ethnicity that affect response to peginterferon/ribavirin therapy for chronic hepatitis C.

- Describe how aspects of a multidisciplinary chronic care model, such as the patient-centered medical home, can be applied to the management of hepatitis C to improve outcomes in a diverse population.
Hepatitis C: A Curable Infection

- Pegylated interferon/ribavirin therapy offers a chance to eradicate hepatitis C
  - Genotype 1 – 40%
  - Genotype 2,3 – 75%-90%
  - Genotype 4 – 55%

- Sustained Virologic Response (SVR)
  - HCV RNA < LLD measured 24 weeks following completion of therapy
  - Multiple studies have equated to a cure
HCV Seroprevalence at LVHN: Staggering Results

Prevalence

Age

Pilot Hepatitis C Clinic: Encouraging Outcomes

- Early Virologic Response (EVR)
- End of Treatment Response (ETR)
- Sustained Virologic Response (SVR)

Relapse: 11.5%

Agostino NM, Yozviak JL SGIM 2009
Yet, The Cure Remains Elusive

- Many comorbidities influence response negatively
  - HIV, Obesity, Hepatic steatosis, Prediabetes/Diabetes
  - Mental Illness, Addiction

- Access to care remains problematic
  - Uninsured, Medicaid, Medicare
  - Minorities
  - Community providers may be disengaged

- We proposed that integration of a hepatitis C treatment program into an existing multidisciplinary, multicultural practice employing a chronic care model successful in other disease states can both increase access to care and improve treatment outcomes.
Hepatitis Care Center

- Merged services with LVHN AIDS Activities Office: A True Medical Home
  - Ryan White CARE Act (HIV primary care practice)
  - More than a decade of experience with viral hepatitis treatment (HBV and HCV)
  - Experts in adherence support

- Multidisciplinary staff
  - General Internists with Viral Hepatitis/HIV Focus of Practice
  - 50% bilingual (English and Spanish)
  - RN/case manager
  - LCSW mental health coordinator
  - Dietician
  - Research
  - Trained medical interpreters
Maximizing Outcomes With Current Therapies

- Maximizing number of patients completing therapy = increased SVR
- Focus on preparation for treatment
  - Repetitive education by multiple disciplines
  - Stabilize and optimize treatment of psychiatric disease/addiction
  - Achieve 10% weight loss if BMI elevated or evidence of insulin resistance; aggressively manage diabetes
  - Partner with primary care physicians (PCP) to optimize management of underlying medical conditions
  - Partner with PCP and psychiatrists, providing clear expectations for management of comorbidities on treatment
  - Build support system within practice and at home, prior to starting therapy
- Should translate into improved adherence, completion of therapy, and SVR
## Demographics

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<th>Race/Ethnicity</th>
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<tbody>
<tr>
<td>White</td>
<td>43% (33)</td>
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<tr>
<td>Hispanic</td>
<td>41% (31)</td>
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<tr>
<td>Black</td>
<td>11% (8)</td>
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<tr>
<td>Asian</td>
<td>3% (2)</td>
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<tr>
<td>Egyptian</td>
<td>3% (2)</td>
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<table>
<thead>
<tr>
<th>Sex</th>
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<tbody>
<tr>
<td>Male</td>
<td>49% (37)</td>
</tr>
<tr>
<td>Female</td>
<td>51% (39)</td>
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</table>

- 76 patients initiated peginterferon/ribavirin therapy
- 61 patients have final data available for analysis
Completion of Therapy

N = 63

- Total: 71% (45)
- White: 69% (18)
- Hispanic: 73% (19)
- Black: 57% (4)
- Other: 100% (4)
Sustained Virologic Response

N = 61

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<tr>
<th>Group</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Total</td>
<td>57%</td>
<td>35</td>
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<tr>
<td>White</td>
<td>71%</td>
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<tr>
<td>Hispanic</td>
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<tr>
<td>Black</td>
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<tr>
<td>Other</td>
<td>75%</td>
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Sustained Virologic Response

N = 61

Total: 57% 86% 67% 61% 71% 71% 54% 52% 51% 100% 100% 86% 0% 100% 100% 67% 0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

White: 100% 100% 100% 100%

Hispanic: 75%

Black: 14% 17% 0%

Total White Hispanic Black
Total Genotype 1 Genotype 2 Genotype 3

Legend:
- Total
- Genotype 1
- Genotype 2
- Genotype 3
Discussion

- Supporting patients through peginterferon/ribavirin therapy involves a multifaceted approach.

- The use of a multidisciplinary treatment model in a multicultural practice resulted in high rates of completion for patients of most races/ethnicities.

- Our approach of coordinating management of medical, psychiatric, and social conditions in a complex and diverse patient population resulted in rates of SVR comparable to those of clinical trials with highly selected participant populations.

  - Genetic predispositions (e.g. IL28B) continue to lead to disparate rates of SVR with current therapies.
SVR Comparisons:  
Focus on White Patients

SVR Comparisons:
Focus on Hispanic Patients


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<th>LVHN</th>
<th>Win-R</th>
<th>LATINO</th>
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<tbody>
<tr>
<td>Overall</td>
<td>54%</td>
<td>34%</td>
<td>52%</td>
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<tr>
<td>Genotype 1</td>
<td>52%</td>
<td>24%</td>
<td>34%</td>
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<tr>
<td>Genotype 2/3</td>
<td>60%</td>
<td>54%</td>
<td>60%</td>
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Discussion (cont.)

- By focusing efforts on stabilization of medical/psychiatric comorbidities and preparation of patients for peginterferon/ribavirin therapy, treatment of HCV can be provided to a broader population.

- This model of care can be replicated, particularly in practices transitioning to become patient-centered medical homes, where medical, case management, mental health, and nutrition services may be co-located.
Acknowledgements

- Our co-authors
- Hepatitis Care Center and AIDS Activities Office Staff
- Jean D’Aversa BSN, ACRN
- Timothy Friel MD, Marcelo Gareca MD, FACP, Margaret Hoffman-Terry MD, FACP
- LVHN -17th Street Campus Administration
  - Edgar Maldonado MD, Linda Faust, James Geiger
- Debbie Salas-Lopez MD, FACP
Questions?

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