HCV: The Magnitude of the Problem

The Cost-Effectiveness of Birth-Cohort Screening for Hepatitis C Antibody in U.S. Primary Care Settings

- 4.1 million, 75% viremic CDC: screen with risk factors (IVDA, ALT etc)
  - 25-50% aware of dx, 1945-1965 cohort highest prevalence

- Previously validated simulation model to estimate the cost-effectiveness of birth-cohort screening for HCV in the united states

- 4 scenarios:
  1. No screening or treatment;
  2. Risk-based screening, in which 18.5% (1% per year over the next 20 years) screened and offered peginf+r (33% G1 SVR, 69% G2/3)
  3. Birth-cohort screening in which all people born from 1945 through 1965 and unaware of their HCV antibody status were offered one-time HCV antibody screening, offered peginf+r treatment if identified; (33% G1 SVR, 69% G2/3)
  4. Identical birth-cohort screening scenario in which a) patients with genotype 1 disease who initiated treatment received direct-acting antiviral treatment (DAA) in addition to standard therapy (54% SVR) and b) patients with genotypes 2 and 3 received peginf+r. 69% svr

The Cost-Effectiveness of Birth-Cohort Screening for Hepatitis C Antibody in U.S. Primary Care Settings

- Birth-cohort screening would identify an additional 808,580 cases of HCV
- Prevent 82,000 hcv-related deaths,
- Cost of $2874 per new case identified
- $15,700 per QALY saved assuming standard treatment
- $35,700 per QALY saved assuming DAA with standard therapy


ONLINE EXPERT POSTER REVIEW AND DISCUSSION

Advances in Chronic Hepatitis C Management and Treatment

REPORTING FROM

THE 62ND AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES ANNUAL MEETING

(Jointly Sponsored by the Postgraduate Institute for Medicine and ViralEd, LLC.)

The Cost-Effectiveness of a Telaprevir-Inclusive Regimen as Initial Therapy for Genotype 1 Hepatitis C Infection in Individuals with the CC IL28B Polymorphism

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Abstract 118
The Cost-Effectiveness of a Telaprevir-Inclusive Regimen as Initial Therapy for Genotype 1 Hepatitis C Infection in Individuals with the CC IL-28B Polymorphism

- IL 28B strongest pre-treatment predictor SVR G1 patients
- IL-28B CC with high SVR rates with no DAA/PR

<table>
<thead>
<tr>
<th>Treatment Regimen</th>
<th>WAC Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pegylated Interferon alfa &amp; Ribavirin (PR) x 48 weeks</td>
<td>$36,672</td>
</tr>
<tr>
<td>Pegylated Interferon alfa &amp; Ribavirin (PR) x 24 weeks</td>
<td>$18,336</td>
</tr>
<tr>
<td>Teleprevir/PR x 12 weeks &amp; PR x 12 weeks</td>
<td>$67,536</td>
</tr>
<tr>
<td>Teleprevir/PR x 12 weeks &amp; PR x 36 weeks</td>
<td>$85,872</td>
</tr>
<tr>
<td>PR x 4 weeks, &amp; Boceprevir/PR x 24 weeks</td>
<td>$47,792</td>
</tr>
<tr>
<td>PR x 4 weeks, &amp; Boceprevir/PR x 32 weeks, &amp; PR x 12 weeks</td>
<td>$71,873</td>
</tr>
</tbody>
</table>

Question: Is the use of telaprevir as first-line therapy cost-effective in IL 28Bcc?


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Decision Tree

[Decision Tree Image]

**Incremental Cost-effectiveness Ratio (ICER) Similar Efficacy**

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Cost (SE)</th>
<th>QALYs (SE)</th>
<th>ICER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peg/RBV RGT</td>
<td>$46,785 (946)</td>
<td>19.26 (0.80)</td>
<td></td>
</tr>
<tr>
<td>PEG/RBV</td>
<td>$54,931 (867)</td>
<td>19.38 (0.82)</td>
<td>$65,051/QALY</td>
</tr>
<tr>
<td>TVR RGT</td>
<td>$68,788 (1464)</td>
<td>19.34 (0.86)</td>
<td>(Dominated)</td>
</tr>
</tbody>
</table>

CC *IL28B* polymorphism, initial therapy with a telaprevir-based regimen is unlikely to be cost effective under current cost and efficacy conditions.

**Acceptability Curve**

A US-Based Cost-Effectiveness Analysis of Boceprevir-Based Regimens in Previously Untreated Adult Subjects with Chronic Hepatitis C Genotype

Assuming a willingness to pay threshold of $50K, BOC/RGT was cost-effective compared to PR48 in nearly 100% of the simulations and BOC/RGT was cost-effective compared to PR48 in approximately 20% of the simulations.

BOC/RGT cost-effective at threshold of $50K for sensitivity analyses. The CEAC indicates that the probability that BOC/RGT is cost-effective at a threshold of $50K is nearly 100%.

Cost-Effectiveness of Boceprevir Use in Patients with Chronic Hepatitis C Genotype-1 Who Failed Prior Treatment with Peginterferon/Ribavirin Markov Model

Boceprevir based regimens are cost-effective compared to PR48 in NRs
- Response-guided therapy is cost-effective at a willingness-to-pay threshold of $50K
- Fixed duration therapy is cost-effective at willingness-to-pay threshold of $100K