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The Efficacy of Combined Sofosbuvir and Daclatasvir in Treating Hepatitis C Patients — A Preliminary Report
Conflicts of Interest

SM, HP has received research and travel grants from RojanPharma Co.

ANB is a shareholder in RojanPharma Co.
The Efficacy of Combined Sofosbuvir and Daclatasvir in Treating Hepatitis C Patients – A Preliminary Report

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Sofosbuvir + Daclatasvir

A combination approved for treating all genotypes of hepatitis C
Produced by two different companies
- which do not get along with each other very well
  We have no brand combination pill
Industry-sponsored research is sparse
Sofosbuvir/Daclatasvir Fixed-Dose Combination Pill

Sofosbuvir, 400 mg
Daclatasvir, 60 mg
Cheap (US$90-300 per treatment course)
Available for research since 2015
Sofosbuvir/Daclatasvir

The usual treatment duration is 12 weeks. Current guidelines (EASL, AASLD, WHO) recommend adding ribavirin or treating for 24 weeks (instead of 12), or both for some patient populations. These recommendations are based on a very low volume of patients (no industry-sponsored research).
The SD-1000 Study

In order to produce data on less-represented patient populations
1000 HCV patients
  All genotypes
  Previous treatment failures
  Renal failure (including hemodialysis patients)
  HIV co-infection
  Immune-compromised
  Active PWID
Multi-center (>50 centers)
Final results expected by end of 2017
SD-1000 Treatment Protocol

Sovodak 400/60 once daily for 12 weeks (SDK/12)
If cirrhosis
   SDK for 24 weeks (SDK/24) or
   SDK + Ribavirin for 12 weeks (SDK/RBV/12)
HIV cases
   on efavirenz: SDK 400/90 (90 mg daclatasvir) for 12 wk
   on atazanavir: SDK 400/30 (30 mg daclatasvir) for 12 wk
   if cirrhosis: above treatments for 24 wks
Regardless of genotype and previous treatment history
Patient Flow So Far

Enrolled: 1656
Started treatment: 1587
Still under treatment: 333
Ended treatment: 1254
Have reached the point of SVR: 684
Enrolled Patients

Cirrhosis: 602
Decompensated cirrhosis 59
Chronic renal failure 72 (59 on hemodialysis)
Transplant (liver and kidney) 34
HIV coinfection 151
HBV coinfection (HBs Ag +ve) 14
Previous treatment failure 260
DAA treatment failure 13
SVR Rates Per Genotype
(Per Protocol)

<table>
<thead>
<tr>
<th>Genotype</th>
<th>Count</th>
<th>SVR Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>G1</td>
<td>377/382</td>
<td>(98.7%)</td>
</tr>
<tr>
<td>G2</td>
<td>8/9</td>
<td>(89.9%)</td>
</tr>
<tr>
<td>G3</td>
<td>234/239</td>
<td>(97.9%)</td>
</tr>
<tr>
<td>G4</td>
<td>5/5</td>
<td>(100%)</td>
</tr>
<tr>
<td>Mixed</td>
<td>3/3</td>
<td>(100%)</td>
</tr>
<tr>
<td>Un typeable</td>
<td>6/6</td>
<td>(100%)</td>
</tr>
<tr>
<td>Not tested</td>
<td>38/40</td>
<td>(95.0%)</td>
</tr>
</tbody>
</table>

**Total:** 671/684 (98.1%)
**SVR Rates Per Subgroup**

*(Per Protocol)*

<table>
<thead>
<tr>
<th>Condition</th>
<th>Count</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirrhosis</td>
<td>295/301</td>
<td>97.4%</td>
</tr>
<tr>
<td>Decompensated cirrhosis</td>
<td>19/19</td>
<td>100%</td>
</tr>
<tr>
<td>Chronic renal failure</td>
<td>20/20</td>
<td>100%</td>
</tr>
<tr>
<td>Post transplant</td>
<td>13/14</td>
<td>92.9%</td>
</tr>
<tr>
<td>HIV coinfection</td>
<td>10/10</td>
<td>100%</td>
</tr>
<tr>
<td>Previous treatment</td>
<td>107/110</td>
<td>97.3%</td>
</tr>
</tbody>
</table>
Side effects?

Weakness
Headache
Insomnia
Abdominal pain
Dry cough
Diarrhea
Pruritic rash
Skin scaling

Only one case lead to discontinuation (CRF/hemodialysis patient, diarrhea)
Five deaths: one of HCC, three decompensated cirrhosis (unrelated), one unknown
No exacerbation of HBV
Conclusions:

The combination of sofosbuvir and daclatasvir as a fixed-dose combination pill is extremely effective in treating hepatitis C in all subgroups, including CRF, treatment experienced…

Genotype is not required

Cirrhosis can be treated with 12 weeks of treatment

This is by far the largest study on this combination and our results take precedence to current guidelines
Implications for Elimination

Sovodak has >98% efficacy, no need to test for SVR
Negligible side effects
Almost no significant drug interaction
Genotype not required (cheap enrollment)
Viral count not required, qualitative PCR is enough (cheap enrollment)
Cheap, US$90 per treatment course (for elimination)

Perfect for elimination protocols