**Lipid Lowering Effects of Rosuvastatin in HIV-Infected Patients With A Boosted Protease Inhibitor as Part of their Highly Active Antiretroviral Therapy**

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**Introduction**

- Highly active antiretroviral therapy (HAART) has transformed the human immunodeficiency virus (HIV) from a terminal disease to a manageable chronic disorder.
- Hyperlipidemia has become a common issue in the management of HIV due to factors, including the aging of our population, comorbid conditions, and the use of certain antiretrovirals, such as protease inhibitors (PIs).1,2
- PI are substrates and inhibitors of the cytochrome P450 (CYP450) system, particularly the CYP3A4 isoenzyme.3-5
- Although most studies rely on CYP450 for elimination, rosuvastatin is primarily excreted unchanged in the urine.4
- A recent study in HIV-negative subjects evaluated the bioequivalence of rosuvastatin and lipophilic statins15 when administered alone and in combination, and showed an increase in plasma concentrations of the statin when administered in conjunction with the PI.15
- Paradoxically, patients experienced a blunted lipid-lowering response when rosuvastatin was coadministered with lipophilic statins in spite of the enhanced serum levels, questioning the utility of this agent in patients on HAART.
- We conducted a retrospective analysis to evaluate the response to rosuvastatin in HIV-infected patients on PI-based regimens.

**Objectives**

Primary Outcomes:
- Difference in low density lipoprotein (LDL) serum concentrations after 3 months of treatment with rosuvastatin and other agents of rosuvastatin therapy.
- Difference in the total cholesterol (TC)/high density lipoprotein (HDL) ratio (TC:HDL) after 3 months of rosuvastatin therapy.

Secondary Outcomes:
- Difference in TC, HDL, and triglyceride (TG) levels after 3 months of rosuvastatin therapy.
- Effect on LDL, triglyceride, and HDL levels (measured in mmol/L and mg/dL).

**Methods**

- Retrospective chart review of 63 HIV-infected patients treated at 8ant Michael's Medical Center in Newark, NJ from March 2000 to October 2006.
- All patients must have received treatment with rosuvastatin for at least 3 months, and had a lipid profile drawn within that interval.
- All patients were initiated on HAART and compliant with their regimen with at least 90% adherence.

**Results**

- Table 1: Baseline Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>50 (16)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male: 30%</td>
</tr>
<tr>
<td>Race</td>
<td>White: 60%</td>
</tr>
</tbody>
</table>

- Table 2: Change in Lipid Profile over Time

<table>
<thead>
<tr>
<th>Time (months)</th>
<th>TC (mg/dL)</th>
<th>HDL (mg/dL)</th>
<th>LDL (mg/dL)</th>
<th>TG (mg/dL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>250</td>
<td>72</td>
<td>104</td>
<td>193</td>
</tr>
<tr>
<td>3 months</td>
<td>221</td>
<td>58</td>
<td>85</td>
<td>173</td>
</tr>
</tbody>
</table>

**Discussion**

- Rosuvastatin significantly reduced LDL and TG (29.3% and 17.5%, respectively).
- Rosuvastatin appeared well tolerated, although one patient discontinued therapy due to myalgia and an increased creatine kinase.
- Strategic response was not affected by the addition of the antiretroviral agent.

**Conclusions**

- Rosuvastatin may have a role in the treatment of dyslipidemia in HIV-infected patients on PI-based HAART.

**References**


**Disclosure & Acknowledgements**

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**Conference Implication**

- This work is intended to be considered as a presentation of the findings of the study at the AHA 2009 meeting.