Pharmacokinetics of Efavirenz (ETR) in HIV-1-Infected Pregnant Women

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Antiviral Activity and Safety

ETR 200 mg bid (ETR = Efavirenz) and C+4 (C+4 = abacavir + lamivudine) were evaluated in this study. ETR was well tolerated and repeated daily dosing did not lead to accumulation of the drug.

Table 1: Efavirenz (ETR) Pharmacokinetic Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Mean (±SD)</th>
<th>Median (Q1-Q3)</th>
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</thead>
<tbody>
<tr>
<td>Free ETR mg/L</td>
<td>0.2 ± 0.1</td>
<td>0.2 (0.15-0.3)</td>
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<tr>
<td>ETR mg/L</td>
<td>3.7 ± 1.6</td>
<td>3.5 (2.3-6.3)</td>
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<tr>
<td>T1/2 (h)</td>
<td>1.9 ± 0.7</td>
<td>2.0 (1.5-2.8)</td>
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</table>

Statistical Analysis

ETR pharmacokinetic parameters were summarized per exposure period and trimester (both low [ETR ≤ 1.5] and postpartum [ETR > 1.5]).

Results

ETR pharmacokinetic parameters including statistical analysis, in ETR or the third trimesters of pregnancy and postpartum are shown in Table 1. Cmax, t1/2, and AUC were higher in the second trimester compared with other periods (p < 0.05). AUC was higher in the second trimester and third trimesters compared to those postpartum.

ETR Pharmacokinetic Evaluations

ETR pharmacokinetics were performed at study visits 5 days and 24 h after the last ETR dose in the second and third trimesters of pregnancy. ETR pharmacokinetics were comparable in nonpregnant and pregnant women.

Conclusions

Higher exposure of ETR was observed during pregnancy compared with nonpregnant, with a higher t1/2, higher AUC, and lower Cmax in the second trimester compared to the postpartum period. The increased ETR exposure was not associated with increased incidence of SAEs. The study is the first of its kind to demonstrate a reliable pharmacokinetic model for ETR during pregnancy, and is therefore recommended for further study.

Acknowledgments

Editorial support was provided by Courtne St. Amour, PhD, of MedErgy, and was funded by Janssen Research & Development, llive, AL, USA.

References