Background

Effective contraception, including hormonal contraception (HC), prevents unintended pregnancies and reduces maternal mortality. The World Health Organization now recommends universal lifelong antiretroviral therapy (ART). Drug-drug interactions between HC and ART may reduce efficacy or increase toxicity of either. Progestin-based HC may increase viral replication, diversity, viral load set point, or decrease immune regulation in female genital tract.

Study objective: Among HIV-positive women on ART, to explore the association between HC use and 1) plasma viral suppression and 2) genital HIV shedding

Methods

1,079 HIV-positive women initiated ART from 3 prospective cohort studies in Africa: The Partners in Prevention HSV/HIV Transmission Study, Couples Observational Study, and Partners PrEP Study

Exposures

Contraceptive use and ART regimen self-reported, analyzed every 3 months

Outcomes

Plasma viral suppression (<400 copies/mL), assessed every 6 months, using multivariate Cox proportional hazards regression

Genital HIV shedding (HIV-1 RNA in endocervical swabs, LLQ 48 copies/mL), assessed every 6 months, using multivariate logistic regression with GEE

Results

At ART initiation, HC use was: 69% non-hormonal or no method, 20% injectable, 6% implant, and 5% oral

Plasma viral suppression was high (90% by 6 months)

HC use did not diminish time to plasma viral suppression

Sub-group analysis, HC and time to plasma viral suppression did not differ by ART regimen (p=0.31 for the interaction term)

Genital viral shedding was uncommon (9% had any detectable HIV-1 RNA)

HC use was not associated with an increased detection of shedding

Table 1: HC use and plasma viral suppression

<table>
<thead>
<tr>
<th>Number of women achieving viral suppression/person-years</th>
<th>628/230</th>
<th>174/70</th>
<th>56/25</th>
<th>47/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unadjusted hazard ratio (HR; 95% CI)</td>
<td>Ref.</td>
<td>0.91 (0.75-1.10)</td>
<td>1.25 (1.03-1.50)</td>
<td></td>
</tr>
<tr>
<td>Adjusted hazard ratio* (aHR; 95% CI)</td>
<td>Ref.</td>
<td>0.89 (0.75-1.07)</td>
<td>1.33 (1.08-1.65)</td>
<td></td>
</tr>
</tbody>
</table>

*Adjusted for plasma viral load before ART initiation, age at study enrollment (224 years or >24 years), and study

Figure 1: Time to plasma viral suppression

Table 2: HC use and genital viral shedding

<table>
<thead>
<tr>
<th>Contraceptive use</th>
<th>Number of samples with detectable genital viral shedding/total number of samples (%)</th>
<th>Unadjusted odds ratio (OR; 95% CI)</th>
<th>Adjusted odds ratio (aOR; 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-hormonal/no method</td>
<td>104/1056 (10%)</td>
<td>Ref.</td>
<td>Ref.</td>
</tr>
<tr>
<td>Injectable</td>
<td>38/353 (11%)</td>
<td>1.10 (0.74-1.65)</td>
<td>1.07 (0.59-1.95)</td>
</tr>
<tr>
<td>Oral</td>
<td>5/106 (9%)</td>
<td>0.80 (0.36-1.64)</td>
<td>0.89 (0.31-2.49)</td>
</tr>
<tr>
<td>Implant</td>
<td>4/78 (5%)</td>
<td>0.39 (0.17-1.33)</td>
<td>0.39 (0.17-1.33)</td>
</tr>
</tbody>
</table>

Conclusions

HC does not delay time to plasma viral suppression

Most studies find no deleterious effect of HC on HIV outcomes

HC not associated with genital viral shedding in women on ART

Progestin-based HC linked with genital viral shedding and HIV transmission from women not on ART to their male partners

HIV-positive women should be offered all contraceptive options

Limitations

HC and ART use self-reported, lack specificity on HC methods

Outcomes measured sparsely

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References


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Hormonal contraception does not affect ART effectiveness or genital HIV shedding

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