increase in NNRTI related side effects. Since PI experienced patients, with no apparent NNRTIs (NVP and EFV) in heavily pretreated the effectiveness of the combination of two regimen additionally appealing.

bolic disorders make this dual NNRTI based and the absence of NNRTI associated meta-
tem disturbances. None of the patients dis-
aemia and EFV related central nervous sys-
with EFV induced hepatotoxicity also had 
in the third case, suggesting a possible associ-
cific cause of liver toxicity could be identified
len doses. The lower limit of quantitation was
research ethics committee at Bellevue Hospi-
regimen (table 1). Inclusion of these patient 
charts in this study was approved by a 
search ethics committee at Bellevue Hospi-
and 67% (2/3) of NNRTI experienced patients
naive patients had viral loads <50 copies/ml.

Table 1 Baseline characteristics and outcome for NNRTI naive and experienced patients

<table>
<thead>
<tr>
<th>Patient Regimen</th>
<th>Baseline viral load (copies/ml)</th>
<th>Baseline CD4+ cell count (cells x10^3/l)</th>
<th>Months of follow-up</th>
<th>Last viral load (copies/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NVP+EFV+d4T</td>
<td>d4T, d4T, RTV, IDV, ABC</td>
<td>37100</td>
<td>290</td>
<td>15</td>
</tr>
<tr>
<td>2 NVP+EFV+d4T</td>
<td>NVP, CBV, IDV</td>
<td>436000</td>
<td>183</td>
<td>7</td>
</tr>
<tr>
<td>3 NVP+EFV+ABC</td>
<td>d4T, d4T, NVP, ddC</td>
<td>27000</td>
<td>–</td>
<td>13</td>
</tr>
<tr>
<td>4 NVP+EFV+d4T</td>
<td>CBV, NVP, SQV</td>
<td>151000</td>
<td>161</td>
<td>9</td>
</tr>
<tr>
<td>5 NVP+EFV+d4T</td>
<td>NVP, CBV</td>
<td>3920</td>
<td>18</td>
<td>&lt;50</td>
</tr>
<tr>
<td>6 NVP+EFV+d4T+d4L</td>
<td>d4T, d4T, NVP, ddC</td>
<td>59000</td>
<td>440</td>
<td>6</td>
</tr>
<tr>
<td>7 NVP+EFV+RTV+IDV</td>
<td>IDV, NVP, QT</td>
<td>750000</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>8 NVP+EFV+d4T</td>
<td>NVP, CBV</td>
<td>750000</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td>9 NVP+EFV+d4T</td>
<td>ddI</td>
<td>12</td>
<td>12</td>
<td>&lt;50</td>
</tr>
<tr>
<td>10 NVP+EFV+d4T</td>
<td>RTV, ddI, Pi</td>
<td>35900</td>
<td>180</td>
<td>3</td>
</tr>
<tr>
<td>11* NVP+EFV+RTV+IDV</td>
<td>DLV, RTV, d4T</td>
<td>31000</td>
<td>190</td>
<td>14</td>
</tr>
<tr>
<td>12* NVP+EFV+RTV+IDV</td>
<td>SQV, NVP, ddI, d4T</td>
<td>8900</td>
<td>276</td>
<td>13</td>
</tr>
<tr>
<td>13* NVP+EFV+RTV+IDV</td>
<td>ddL, d4T, ddI, EFV, IDV</td>
<td>3900</td>
<td>235</td>
<td>11</td>
</tr>
</tbody>
</table>

*NNRTI experienced patients.

1 NVP = nevirapine, EFV = efavirenz, d4T = Stuvudine, ABC = abacavir, ddL = didanosine, RTV = ritonavir, IDV = indinavir, CBV = carbovir, SQV = saquinavir, DLV = delaviridine.

References


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Comparing cost effectiveness of screening women for Chlamydia trachomatis in systematic and opportunistic approaches

Screening women for asymptomatic Chlamydia trachomatis (CT) infections is indicated to prevent the spread of CT and the development of complications such as pelvic inflammatory disease (PID), chronic pelvic pain, ectopic pregnancy, tubal infertility, and neonatal pneumonia (major outcomes averted: MOA). Cost effectiveness presents an important aspect in the decision making regarding actual implementation. Recently, in this journal Van Valkengoed et al published a paper on the cost effectiveness of systematic screening among women in Amsterdam (Netherlands), using pharmacoeconomic modelling. Using the same model, results on the cost effectiveness of an opportunistic screening in the same women have also been published. Specific model assumptions differed in both publications. The aim of this letter is to compare cost effectiveness of systematic and opportunistic screening using similar model assumptions and correcting for potential biases.

Opportunistic screening was done during May 1996 to May 1997 in a pilot study. Women visiting the participating GPs were eligible for screening if they considered themselves heterosexually active, were aged 15–40 years, and did not visit their GP for sexually transmitted disease complaints (participation among women: 96% compared with 50% in the systematic screening). In this letter we report on the age group 15–30. Obviously, the effectiveness of this type of screening depends on the frequency of visiting the GP; 87% of Dutch women aged 15–30 visit the GP at least once per year. As in the systematic universal screening, testing was done with ligase chain reaction (LCR) on urine. Participating GPs in the opportunistic screening had an over-representation compared to the general Amsterdam situation of participants from Caribbean and Surinam ethnicity with relatively high CT prevalence. To enhance valid comparison with the systematic screening, asymptomatic CT prevalence rates in the opportunistic screening were recalculated standardising for the distribution of the Amsterdam population over the ethnic groups of Caribbean, Surinam, and other (source: Statistics Amsterdam).

Parameters in the pharmacoeconomic model were kept similar to the previous paper in this journal, except for the probability of PID after asymptomatic infection. For this probability we applied 20% compared to 10% in the paper by Van Valkengoed et al. We even consider 20% as a very conservative estimate for the risk of PID in our model. Cost effectiveness was estimated as net costs per MOA in baseline analysis using assumptions.
above and sensitivity analysis (PID risk at 10%, high performance testing and pooling).1,5

In the baseline analysis cost effectiveness is US$3300 per MOA for systematic screening of women aged 15–25 and $1400 for opportunistic screening of that same age group. Including sensitivity analysis, cost effectiveness of systematic screening ranges from $2000–$11 100 per MOA (see table 1). For opportunistic screening this range is $500–$4100 per MOA. For the age group of 15–30, cost effectiveness is estimated to be generally slightly less favourable.

We conclude that opportunistic instead of systematic screening reduces net costs per MOA up to 75% (age groups 15–25) and by approximately 50% (age groups 15–30) over a range of plausible assumptions. Opportunistic CT screening in Amsterdam is therefore more attractive than systematic screening from a pharmacoeconomic point of view. Obviously, pharmacoeconomics only present one aspect in decision making concerning CT screening, others being, for example, implementation issues and budgetary constraints.

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References

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Major improvements in cost effectiveness of screening women for Chlamydia trachomatis using pooled urine specimens and high performance testing

Screening of asymptomatic Chlamydia trachomatis (CT) infections is indicated to prevent the spread of CT and the development of secondary complications like pelvic inflammatory disease, ectopic pregnancy, and tubal infertility. Cost effectiveness presents an important aspect in the decision making regarding actual implementation. A recent paper in this journal by Van Valkengoed et al5 addressed cost effectiveness, using an established pharmacoeconomic model,6 of a systematic screening programme for asymptomatic CT infections in women registered in general practices in Amsterdam, based on mailed home obtained urine specimens.7 The aim of this letter is to extend the application of the pharmacoeconomic model with regard to pooling and improved test performances (sensitivity and specificity).

We recently determined the sensitivity and specificity for two commercially available CT detection assays for urine specimens from asymptptomatically CT infected women and men.7 In total, 2906 mailed home obtained urine specimens were tested for CT using both ligase chain reaction (LCR) and polymerase chain reaction (PCR) testing. We showed that for individual testing, the test sensitivity/specificity for LCR and PCR could be estimated at 78.6%/99.7% and 98.8%/99.9%, respectively. Furthermore, we recently showed by using individual urine samples (n = 650) and samples pooled by five (n = 130) that pooling has a relative sensitivity and specificity of 100%. Since only CT positive pools have to be analysed for the specific CT positive cases approximately 60% of the number of tests could be saved in our population with an estimated CT prevalence of 2–3%.9

In the pharmacoeconomic model test performances of 85.0% sensitivity and 99.0% specificity were previously assumed.7 Furthermore, the model included population based estimates of CT prevalence, the costs of the programme, the health gain effects and the related monetary benefits. Health gain effects considered were averted pelvic inflammatory disease, chronic pelvic pain, ectopic pregnancy, infertility, and neonatal pneumonia (major outcomes averted; MOA). Both direct and indirect costs and benefits were considered. We investigated the effects on baseline cost effectiveness of pooling and improvements in test performance.

Population based prevalence in the systematic screening was 2.2% for women aged 15–40 and 2.9% for women aged 15–25. Van Valkengoed et al estimated baseline cost effectiveness for systematic screening in Amsterdam using LCR at net costs of US$11 100 for women aged 15–25 and $15 800 per MOA for women aged 15–40 (table 1).10 High performance testing of 98.8% sensitivity and 99.9% specificity was estimated to reduce net cost per MOA by approximately 20%. Pooling urine specimens by five was estimated to reduce net costs per MOA by 57%. A total decrease of 67%

### Table 1: Cost effectiveness in net costs per major outcome averted (in US$) for Amsterdam (Netherlands) of two screening strategies for asymptomatic Chlamydia trachomatis (women aged 15–25 and women aged 15–40), in the baseline, assuming high performance testing*, pooling†, and both

<table>
<thead>
<tr>
<th>Women aged (years)</th>
<th>Baseline</th>
<th>High performance testing</th>
<th>Pooling</th>
<th>High performance testing and pooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>15–25</td>
<td>11 100</td>
<td>8 900</td>
<td>4 800</td>
<td>3 700</td>
</tr>
<tr>
<td>15–40</td>
<td>13 800</td>
<td>12 400</td>
<td>6 800</td>
<td>5 200</td>
</tr>
</tbody>
</table>

*PCR testing with sensitivity of 98.8% and specificity of 99.9%; †pooling of urine specimens by five with relative sensitivity and specificity of 100%.