Comparison of YAZ to SSRIs in the Treatment of Premenstrual Dysphoric Disorder: Cost-Effectiveness Analysis

Regina Rendas-Baum, MS1, Min Yang, MD, PhD1, Joseph Gricar, MS2
1QualityMetric Incorporated, Lincoln, RI; 2Independent Health Care Consultant, New York, NY

BACKGROUND

Four medications have been approved by the Food and Drug Administration (FDA) for treatment of premenstrual dysphoric disorder (PMDD), including three selective serotonin reuptake inhibitors (SSRI) agents (i.e., fluoxetine – Sarafem®, sertraline – Zoloft®, and paroxetine – Paxil CR®) and one androgenic contraceptive agent (i.e., DRSP/EE – YAZ®).

Although efficacy of SSRIs in alleviating PMDD symptoms has been shown in a meta-analysis of 15 trials (1), approximately 40% of women with PMDD reported no improvement under SSRI therapy (2,3) and only around 25% of those treated can be classified as remitters (3,4). In addition, antidepressant medications are usually not well-tolerated by patients (5,6).

Cost effectiveness of the SSRIs has been assessed in the treatment of depression (7,12). To our knowledge, no published studies have evaluated the cost-effectiveness of YAZ treatment.

OBJECTIVE

To assess the cost-effectiveness of the four drugs with PMDD indication approved by the FDA.

METHODOLOGY

Analytical Model (Table 1, Figure 1)

- Intervention: Initial treatment on one of three SSRIs or DRSP/EE for three cycles. Women who failed to achieve success but did not drop out, at the end of the third cycle, switched to an alternative medication for three additional cycles.
- Time-frame: 6 cycles
- Population: Women of reproductive age who have been diagnosed with PMDD and for whom the treatments considered in the analysis are viable options.

Table 1 – Model Inputs and Parameters

<table>
<thead>
<tr>
<th>RESOURCE UTILIZATION</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRSP/EE (YAZ)</td>
<td></td>
</tr>
<tr>
<td>Fluoxetine</td>
<td></td>
</tr>
<tr>
<td>Paroxetine</td>
<td></td>
</tr>
<tr>
<td>Sertraline</td>
<td></td>
</tr>
<tr>
<td>General practice</td>
<td></td>
</tr>
<tr>
<td>Physician Specialty</td>
<td></td>
</tr>
</tbody>
</table>

- Efficiency Analysis
- Sensitivity Analysis

Univariate
- Success rate, dropout rate and medication costs associated with three cycles of treatment were varied independently for each strategy.
- Success rate and dropout rate set at lower and upper bounds of 95% confidence interval.
- Medication costs set at 50% and 150% of base case value.

Multivariate
- 10,000 Monte-Carlo simulation runs, varying clinical outcomes and medication costs using probability distributions.
- Outcome probabilities were varied according to Upton defined between 50% and 150% of base case value.
- Medication costs were varied according to Uniform defined between 50% and 150% of base case value.

RESULTS

Table 1 – Model Inputs and Parameters

<table>
<thead>
<tr>
<th>RESOURCE UTILIZATION</th>
<th>Source/Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DRSP/EE (YAZ)</td>
<td></td>
</tr>
<tr>
<td>Fluoxetine</td>
<td></td>
</tr>
<tr>
<td>Paroxetine</td>
<td></td>
</tr>
<tr>
<td>Sertraline</td>
<td></td>
</tr>
<tr>
<td>General practice</td>
<td></td>
</tr>
<tr>
<td>Physician Specialty</td>
<td></td>
</tr>
</tbody>
</table>

- Multivariate (Figure 2)

At a ceiling value of $3,450, initiating treatment with fluoxetine and DRSP/EE had equal probability (0.37) of being the most cost-effective strategy. Ceiling values below $3,450 gave preference to initiating treatment with DRSP/EE, while for higher values fluoxetine was the dominating strategy. At a ceiling value of zero, there was roughly a 70% probability that DRSP/EE was the most cost-effective strategy.

LIMITATIONS

Brand name SSRIs were utilized to derive medication costs. At hypothetical rates of 100% and 50% (50% brand) for use of generic SSRIs, DRSP/EE (YAZ) was dominated by sertraline and fluoxetine in the former scenario, and had an ICER of $862.12 relative to the most-cost-effective option, sertraline, in the latter case.

CONCLUSIONS

The ceiling value at which fluoxetine (Sarafem®) became more cost-effective ($3,450) than DRSP/EE (YAZ) was more than double the value associated with the most costly treatment ($1,332). For women who have been diagnosed with PMDD and who are willing to take an oral contraceptive, DRSP/EE (YAZ) provides a cost-effective alternative to SSRIs.

Women who are reluctant to take antidepressants and those that were not effectively treated with SSRIs can consider DRSP/EE (YAZ) for the treatment of PMDD.

REFERENCES