A Systematic Review of the Cost-Effectiveness of Chemotherapy Regimens

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A Systematic Review of the Cost-Effectiveness of Chemotherapy Regimens

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Background
- Approximately 12 million people are diagnosed with cancer each year.1
- In 2010 the cost of cancer treatment was $125 billion, and it is projected to increase to over $158 billion by 2020.2

Estimated New Cancer Cases in the United States in 2015

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lymphoma</td>
<td>5%</td>
</tr>
<tr>
<td>Myeloma</td>
<td>2%</td>
</tr>
<tr>
<td>Leukemia</td>
<td>3%</td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
</tr>
<tr>
<td>Oral Cavity and Pharynx</td>
<td>3%</td>
</tr>
<tr>
<td>Digestive System</td>
<td>18%</td>
</tr>
<tr>
<td>Respiratory System</td>
<td>14%</td>
</tr>
<tr>
<td>Genital System</td>
<td>20%</td>
</tr>
<tr>
<td>Breast</td>
<td>14%</td>
</tr>
<tr>
<td>Soft Tissue</td>
<td>5%</td>
</tr>
<tr>
<td>Skin</td>
<td>1%</td>
</tr>
</tbody>
</table>

Figure 1

Chemoanalyzing is a recent intervention in medicine and the number of chemotherapy drugs continues to increase. With this increase, there is a need to assess the cost-effectiveness of data to help make clinical decisions. Studies containing cost-analysis data of specific chemotherapies include:
- Cost-Benefit Analyses
- Cost-Effective Analyses
- Cost-Utility Analyses
- Cost-Minimization Analyses

Significance of the Problem
- There are many studies evaluating costs in regards to chemotherapy treatments. However, there is a lack of comprehensive review of the data for clinicians to use to make cost-effective, quality medical decisions.

OBJECTIVE
This systematic review will assess the cost-effectiveness of anticancer medications with a special focus on the quality of care for patients undergoing chemotherapy with the intent to form recommendations that unite evidence-based literature with clinical practice.

LIMITATIONS
- Unexplained heterogeneity or inconsistency of results (including problems with subgroup analyses).
- The design and implementation of available studies suggesting high likelihood of bias.
- Ambiguity of disclosed evidence, including bias, limitations, and threats to validity.
- Imprecision of results, such as wide confidence intervals.
- High probability of publication bias.

SYNTHESIS OF EVIDENCE
Systematic Preferences Based on Pharmacoeconomic Analyses and GRADE Score

<table>
<thead>
<tr>
<th>GRADE Score</th>
<th>Cost Benefit Analysis</th>
<th>Cost-Effective Analysis</th>
<th>Cost-Utility Analysis</th>
<th>Cost-Minimization Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Highest</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>B</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
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<tr>
<td>C</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>D</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Lowest</td>
</tr>
</tbody>
</table>

Table 1

PROJECT TIMELINE

- Spring 2016
  - Organize a grading rubric to review articles
  - Establish and conduct initial literature search

- 2016-2017
  - Establish a literature search and acquire final articles

- 2017-2018
  - Develop a clinical reference for providers

FUTURE DIRECTIONS
- Evaluate new studies or literature and incorporate the data into the clinical reference.
- Periodically reevaluate costs associated with chemotherapy treatments.

REFERENCES