Early stage breast cancer: Variations in total and chemotherapy expenses among 10 million commercially insured members

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Methods

Purpose: To identify differences in chemotherapy treatment and expenses among a large population of early stage breast cancer patients, stratified by site of chemotherapy administration (physician office vs. hospital outpatient site of service when contracting with oncologist providers and when making site of care management recommendations).

Background

Most breast cancers are now diagnosed at an early stage and treated with surgery plus some

Table 1. Early stage breast cancer costs differ by type of treatment

| Type of Treatment | Number of Members | Total Expense | Expense Distribution | Days between Surgery and Start of Chemosurgery
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<tbody>
<tr>
<td>No Chemo</td>
<td>1,526</td>
<td>$58,695</td>
<td>Days between surgery and start of chemotherapy: mean 140 days, standard deviation (SD) 120 days</td>
<td>30 days</td>
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<tr>
<td>Chemo</td>
<td>1,267</td>
<td>$49,591</td>
<td>Days between surgery and start of chemotherapy: mean 140 days, standard deviation (SD) 120 days</td>
<td>30 days</td>
</tr>
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Results

- 1,526 members met analysis criteria for early stage breast cancer after exclusion of members with incomplete claims follow- ing surgery (N = 1,491) and members who received neoadjuvant chemotherapy (N = 61) and patients with diagnosis as advanced metastatic breast cancer (N = 400).
- 1,054 (68.6%) members received chemotherapy, 648 of 2,613 (24.8%) conventional chemotherapy, 355 of 2,613 (13.5%) neoadjuvant chemotherapy.
- 97% of early stage breast cancer cases were diagnosed in 2010-2011.
- 1,965 of 5,050 (38.9%) early stage breast cancer cases were included.
- 2,437 of 5,050 (48.3%) had no adjuvant chemotherapy.
- No Chemo = $49,392, Chemo = $49,980, statistically significant at P=0.0001.

Limitations

- This study uses only the information present in administrative claims data, from which it is often difficult to distinguish between cost elements such as chemotherapy infusion fees, white cell growth factors and antiemetic agents, radiation therapy, and all other pharmacy claims expense.
- The data is not comprehensive and includes less than 6 years of data with complete information for two years. Therefore, there are risks for misclassification bias.
- The study is not powered to understand differences in costs over longer periods of time.
- Member generality and other contextual conditions were not assessed and therefore comparisons between population expenses by site of service should be considered exploratory.

Conclusions

- Early stage breast cancer treatment and expenses vary by site of chemotherapy administration, with the distribution of chemotherapy is needed among patients, chemotherapy regimens.
- This study, using integrated medical and pharmacy claims data from over commercial insured members, provides the average per member total health care expense for the three most commonly used agents and total expenses for combination therapies, including chemotherapy infusion fees, and antiemetic agents, as well as radiation therapy, and all other pharmacy claims.
- Members who received (neoadjuvant or conventional) adjuvant chemotherapy were further categorized by site of chemotherapy administration (physician office or hospital outpatient) based on site of service recorded in the claims data.

References