Management of Cardiovascular Medications in Acute Leukemia: A National Survey

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Background
- Cardiovascular (CV) disease (CVD) is the most common non-cancer cause of late morbidity and mortality in cancer survivors
- Most acute leukemia (AL) treatment protocols contain cardiotoxic chemotherapy agents (e.g., anthracyclines)
- CV medications pose potential risks to AL patients prone to bleeding and volume depletion and are often stopped
- Evidence from surgical and CVD populations shows CV medication interruption can significantly increase CV event rates
- Certain CV medications prevent anthracycline cardiotoxicity
- It is currently unknown how CV medications are managed in Canadian leukemia/bone marrow transplant (L/BMT) centres

Objectives
- Determine common prescribing practices of statins, antiplatelet agents, angiotensin converting enzyme inhibitors (ACEI) and angiotensin II receptor blockers (ARB) in AL patients
  - Frequency, timing and rationale for therapy interruptions
- Compare strategies used to reduce anthracycline cardiotoxicity in British Columbia (BC) to the rest of Canada
- Characterize prescriber attitudes toward clinical pharmacy support for the management of CV medications in AL patients

Methods
- Design: Electronic sample survey using UBC Survey Tool
- Inclusion Criteria: Hematologists from consenting Canadian L/BMT centres that treat adults with AL
- Exclusion criteria: Incomplete surveys

Questionnaire:
- 30-question, pilot-tested, online survey distributed via email
- Questionnaire sections:
  - Prescribing practices of statins, antiplatelets, and ACEI/ARBs
  - Strategies for mitigating risk of anthracycline cardiotoxicity
  - Role of pharmacists in managing CV medications in AL
- 2 email reminders and 1 telephone reminder

Study Dates: January 29 to March 30, 2018

Statistical analysis: Descriptive, Mann-Whitney U & Chi-Squared

Response
- 11 of 16 L/BMT centres in Canada agreed to participate
- 98 hematologists invited → 26 completed → response rate 27%

Table 1: Demographics

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>N (%)</th>
<th>Demographic Characteristics</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Years in clinical practice</td>
<td></td>
<td>Time spent in direct patient care</td>
<td></td>
</tr>
<tr>
<td>&lt; 5</td>
<td>9 (35%)</td>
<td>0%</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>5-15</td>
<td>11 (42%)</td>
<td>25%</td>
<td>2 (8%)</td>
</tr>
<tr>
<td>16-25</td>
<td>4 (15%)</td>
<td>50%</td>
<td>10 (38%)</td>
</tr>
<tr>
<td>&gt; 25</td>
<td>2 (8%)</td>
<td>75%</td>
<td>11 (42%)</td>
</tr>
</tbody>
</table>

Table 2: Frequency & Timing of Medication Interruption

<table>
<thead>
<tr>
<th>Percentage of Respondents Answering Always or Often</th>
<th>0%</th>
<th>20%</th>
<th>40%</th>
<th>60%</th>
<th>80%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statin</td>
<td>12%</td>
<td>23%</td>
<td>42%</td>
<td>15%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antiplatelet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27%</td>
<td>35%</td>
</tr>
<tr>
<td>ACEI/ARB</td>
<td>4%</td>
<td>36%</td>
<td>54%</td>
<td>35%</td>
<td></td>
<td></td>
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<tr>
<td>Documentation</td>
<td></td>
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</tbody>
</table>

Additional Results
- Approximately half of hematologists do not consider medication indication in their decision to interrupt CV medications
- 77% of hematologists do not routinely switch a patient’s statin to one with lower risk of drug interactions (e.g. pravastatin)
- 27% of hematologists do not have access to a full-time clinical pharmacist, yet 83% thought it would be very/extremely helpful

Limitations
- Non-response bias – lower than desired response rate and unequal distribution of response rate by L/BMT centre
- Proportionally low representation from central Canada
- 5 Canadian L/BMT centres did not agree to participate

Conclusions
- Over 60% of hematologists sometimes, often, or always interrupt CV medications which may lead to adverse CV outcomes
- There is variance in prescribing practices across Canada
- BC hematologists are more likely to empirically reduce anthracycline dose which may negatively impact treatment outcome
- National guidelines are needed to minimize unnecessary interruptions to CV therapy
- Further research is needed on the safety and efficacy of both CV medications use in AL and anthracycline dose reductions
- Pharmacists can provide valuable assistance in managing CV medications in AL patients