Use of G-CSF: recent results from French studies

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Disclosures

◆ The presented surveys were granted by Chugai pharma, France
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Outline: do the practices apply to international guidelines?

2006: update of international guidelines for G-CSF treatment:
- Standard threshold of FN risk for G-CSF primary prevention: 20%
- Should be considered if FN risk $\geq 10\%$: age $\geq 65$, comorbidities, medical history


2010: EORTC guidelines

- 2011 French survey about elderly patients ($\geq 70$) with gynaecological cancers

2006-2007 French survey: all ages, solid tumors

- Representative set of 103 practitioners (oncologists, haematologists, pneumologists, gastro-enterologists)
- Detailed analysis of 990 patient cases treated with G-CSF (solid tumors, non hodgkin lymphomas)
2006-2007: Conformity to guidelines

- Primary prevention (classic intent)
- Primary prevention (comorbid conditions)
- Primary prevention (Age ≥ 65)
- Secondary prevention
- Curative setting

Conformity to guidelines

- < 10% FN (161 pts)
- 10-20% NF (67 pts)
- ≥ 20% NF (30 pts)

2010 EORTC guidelines

Step 1
Assess frequency of FN associated with the planned chemotherapy regimen

- FN risk ≥20%
- FN risk 10–20%
- FN risk <10%

Step 2
Assess factors that increase the frequency/risk of FN

<table>
<thead>
<tr>
<th>High risk</th>
<th>Age &gt;65 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased risk</td>
<td>Advanced disease</td>
</tr>
<tr>
<td>(level I and II evidence)</td>
<td>History of prior FN</td>
</tr>
<tr>
<td>Other factors:</td>
<td>No antibiotic prophylaxis, no G-CSF use</td>
</tr>
<tr>
<td>(level III and IV evidence)</td>
<td>Poor performance and/or nutritional status</td>
</tr>
<tr>
<td></td>
<td>Female gender</td>
</tr>
<tr>
<td></td>
<td>Haemoglobin &lt;12g/dL</td>
</tr>
<tr>
<td></td>
<td>Liver, renal or cardiovascular disease</td>
</tr>
</tbody>
</table>

Reassess at each cycle

Step 3
Define the patient’s overall FN risk for planned chemotherapy regimen

- Overall FN risk ≥20%
- Overall FN risk <20%

- Prophylactic G-CSF recommended
- G-CSF prophylaxis not indicated

2011 survey methodology

Representative sample of ~100 practitioners

Phase 1: Attitude, opinion
Impact of geriatric parameters in decision making
Decision criteria for chemotherapy
Decision criteria for G-CSF prescription

Phase 2: Simplified description of currently treated elderly gynaecological cancer patients (treated with or without chemotherapy)

Phase 3: Detailed description of elderly gynaecological cancer patients treated with chemotherapy
## Results: practitioners' characteristics

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>101</td>
</tr>
<tr>
<td><strong>Specialty (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Oncologist</td>
<td>62</td>
</tr>
<tr>
<td>Oncoradiotherapist</td>
<td>39</td>
</tr>
<tr>
<td><strong>Pattern of practice (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Cancer centre</td>
<td>15</td>
</tr>
<tr>
<td>University hospital</td>
<td>32</td>
</tr>
<tr>
<td>General hospital</td>
<td>31</td>
</tr>
<tr>
<td>Private clinic</td>
<td>23</td>
</tr>
<tr>
<td><strong>Gender (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>64</td>
</tr>
<tr>
<td>Female</td>
<td>36</td>
</tr>
</tbody>
</table>
Use of G-CSF in chemo-treated (elderly) patients

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>791</td>
</tr>
<tr>
<td><strong>G-CSF use (% pts)</strong></td>
<td>50</td>
</tr>
<tr>
<td><strong>By indication (% G-CSF prescriptions)</strong></td>
<td></td>
</tr>
<tr>
<td>- primary prevention</td>
<td>41</td>
</tr>
<tr>
<td>- Secondary prevention</td>
<td>9</td>
</tr>
<tr>
<td>- Curative</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>By setting (% pts)</strong></td>
<td></td>
</tr>
<tr>
<td>- adjuvant/neoadjuvant</td>
<td>65</td>
</tr>
<tr>
<td>- metastatic</td>
<td>45</td>
</tr>
<tr>
<td><strong>By age (% pts)</strong></td>
<td></td>
</tr>
<tr>
<td>- 70-72 years</td>
<td>54</td>
</tr>
<tr>
<td>- 73-75 years</td>
<td>57</td>
</tr>
<tr>
<td>- &gt;75 years</td>
<td>42</td>
</tr>
<tr>
<td><strong>By FN risk of chemotherapy (% pts)</strong></td>
<td></td>
</tr>
<tr>
<td>- &gt;20%</td>
<td>100</td>
</tr>
<tr>
<td>-10-20%</td>
<td>73</td>
</tr>
<tr>
<td>- &lt; 10%</td>
<td>45</td>
</tr>
</tbody>
</table>
Conformity to guidelines

Overall population
- No-GCSF: 50%
- Primary prophylaxis: 41%
- Secondary prophylaxis: 10%

Risk < 10%
- No-GCSF: 55%
- Primary prophylaxis: 36%
- Secondary prophylaxis: 9%

Risk 10-20%
- No-GCSF: 59%
- Primary prophylaxis: 27%
- Secondary prophylaxis: 14%

Risk ≥ 20%
- No-GCSF: 0%
- Primary prophylaxis: 0%
- Secondary prophylaxis: 10%
Declared decision criteria for G-CSF use

- **Previous FN**
- **Previous neutropenic events**
- **Previous bone radiotherapy**
- **Previous chemotherapy**
- **Comorbidities**
- **Impaired performance status (>1)**
- **Recent septic event**
- **Anaemia (Hb < 12g/dL)**

Legend:
- Very important
- Important
- Mildly important
- Not important
Are validated risk factors taken into account?

Factors associated with G-CSF primary prevention (n=710)

- Advanced disease
- History of prior FN
- Poor Performance status
- Poor Nutritional status (Alb<35)
- Hemoglobin < 12g/dL
- Liver, renal or cardiovascular disease

EORTC risk factors

- Adjuvant
  - Previous chemotherapy
  - Previous bone radiotherapy
  - 3-4 weeks chemotherapy
- Any geriatric assessment
  - Comprehensive geriatric assessment

Other risk factors

- Geriatric concern

Metastatic setting (n=552)

- Previous FN
- Previous chemotherapy
- Previous bone radiotherapy
Treatment modalities

Cycle of initiation

- **LENORAGRAM (158 pts)**
  - Cycle 1: 83%
  - Cycle 2: 15%
  - Cycle 3: 1%

- **FILGRASTIM (75 pts)**
  - Cycle 1: 78%
  - Cycle 2: 19%
  - Cycle 3: 1%

- **PEGFILGRASTIM (180 pts)**
  - Cycle 1: 85%
  - Cycle 2: 11%
  - Cycle 3: 4%

Day of initiation

- **LENORAGRAM (155 pts)**
  - Day 1 (d1) during chemotherapy: 62%
  - Day 2 to 4 (d2 to d4): 38%
  - After Day 5 (After d5): 38%

- **FILGRASTIM (75 pts)**
  - Day 1 (d1) during chemotherapy: 61%
  - Day 2 to 4 (d2 to d4): 36%
  - After Day 5 (After d5): 4%

- **PEGFILGRASTIM (179 pts)**
  - Day 1 (d1) during chemotherapy: 92%
  - Day 2 to 4 (d2 to d4): 4%
  - After Day 5 (After d5): 4%

Day of initiation (mean)
- **LENORAGRAM (155 pts)**: 5
- **FILGRASTIM (75 pts)**: 4
- **PEGFILGRASTIM (179 pts)**: 2
## Treatment modalities

### G-CSF treatment duration

<table>
<thead>
<tr>
<th>Duration</th>
<th>Lenograstim n= 160 pts (% pts)</th>
<th>Filgrastim n=75 pts (% pts)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 days</td>
<td>20%</td>
<td>21%</td>
</tr>
<tr>
<td>4 days</td>
<td>12%</td>
<td>20%</td>
</tr>
<tr>
<td>5 days</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>6 days</td>
<td>15%</td>
<td>11%</td>
</tr>
<tr>
<td>7 days</td>
<td>9%</td>
<td>3%</td>
</tr>
<tr>
<td>8 days</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>9 days</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10 days</td>
<td>1%</td>
<td>-</td>
</tr>
<tr>
<td>11 days and more</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Mean (days)</strong></td>
<td><strong>4.9</strong></td>
<td><strong>4.7</strong></td>
</tr>
</tbody>
</table>
Conclusions: 2011 French survey (1)

- Patient-related risk factors were considered as important for G-CSF prescription decision.

- Depending on FN risk of treatment protocols, G-CSF were prescribed in primary prevention
  - In 90% of protocols with a FN risk higher than 20%
  - In 59% of those with a FN risk between 10 and 20%
  - In 36% of those with a FN risk lower than 10%

- However G-CSF primary prevention prescriptions were mildly influenced by patient-related risk factors.
Conclusions: 2011 French survey (2)

- G-CSF was mainly initiated 24-72h after the administration of chemotherapy, as recommended by international guidelines. Later administrations were partly explained by fractionated chemotherapy schemes.
- Only 3% of the patients received G-CSF during chemotherapy administration (misuse) compared to 10-18% in a 2006 survey.
- Daily G-CSF were used in 55% of the patients with a mean duration of 4.8 days. (1-3 days treatment duration is found mainly in weekly chemotherapy regimens)
THOMs

- An increase of G-CSF use is observed in all FN-risk categories in the elderly
- However, validated risk factors are rarely taken into account during the treatment decision making