Febrile Neutropenia-associated Hospitalization in Breast Cancer Patients in Docetaxel-containing Regimen: A Retrospective Cohort Study on Duration of Prophylactic GCSF Administration

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## Background and Methodology

### Targeted Population
All breast cancer patients in Hong Kong being treated in public hospitals under Hospital Authority, fulfilling the criteria below:

### Inclusion Criteria
- ≥18 years old
- Completed, with a well-documented medication record, chemotherapy of TC, TJH, AC-T, TAC or FEC-T with the start date of first Docetaxel-containing cycle in 1/1/2014 - 31/12/2016
- Start of GCSF prophylaxis ≤5 days after initiation of chemotherapy per each cycle,
- Received either no primary GCSF prophylaxis, 4/5-day or 7-day primary GCSF prophylaxis in all cycles of Docetaxel

### Exclusion Criteria
- Patients who have received chemotherapy and/or radiotherapy for another cancer diagnosis prior to administration of Docetaxel-containing regimen for breast cancer

To compare among different primary GCSF prophylaxis protocols,

<table>
<thead>
<tr>
<th>Primary Outcome</th>
<th>Incidence of FN</th>
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<tbody>
<tr>
<td>Secondary Outcomes</td>
<td>Hospitalization of FN (admission rate, length of stay, time to first hospitalization)</td>
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Results and Discussion

- Offering PP could reduce incidence of FN

<table>
<thead>
<tr>
<th>Regimen</th>
<th>Incidence of FN 4/5-Day PP</th>
<th>Incidence of FN 7-Day PP</th>
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<tbody>
<tr>
<td>TC</td>
<td>OR: 0.31 (95% CI: 0.17-0.57)</td>
<td>OR: 0.20 (95% CI: 0.09-0.44)</td>
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<tr>
<td>TJH</td>
<td>OR: 0.15 (95% CI: 0.06-0.37)</td>
<td>OR: 0.15 (95% CI: 0.06-0.38)</td>
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<tr>
<td>AC-T</td>
<td>OR: 0.28 (95% CI: 0.11-0.68)</td>
<td>OR: 0.77 (95% CI: 0.31-1.90)</td>
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<tr>
<td>FEC-T</td>
<td>OR: 0.46 (95% CI: 0.33-0.95)</td>
<td>OR: 0.71 (95% CI: 0.32-1.56)</td>
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</table>

- Difference in incidence of FN between 4/5-day PP and 7-day PP for patients on TC (OR: 0.65, 95% CI: 0.34-1.24), TJH (OR: 1.03, 95% CI: 0.32-3.34) and FEC-T (OR: 1.56, CI: 0.84-2.89) are modest.

Enrolled 2518 cases
Treating 3 TJH patients with 4/5-day or 7-day PP could avoid a case of FN.

Treating 6 TC patients with 7-day PP, or 7 patients with 4/5-day PP could also prevent a case of FN.

Similar benefits could not be obtained in sequential cycles of Docetaxel after FEC and AC.
Results and Discussion

- PP could offer savings in healthcare expenditure in TC (4/5-Day: USD286.45; 7-Day PP: USD234.69) and TJH (4/5-Day: USD728.45; 7-Day PP: USD540.53)
- Economic benefits were modest in AC-T and FEC-T due to a relatively high cost of GCSF (USD18.5) during study period and less significant difference in incidence of FN between cases with PP and without PP.

With the emergence of more biosimilars for Filgrastim, cost of GCSF primary prophylaxis would reduce
  - Even more favourable to offer GCSF PP with healthcare expenditure savings
  - Certainly favourable if cost of GCSF < USD4.5
The End
Question Time – Feel free to ask!

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