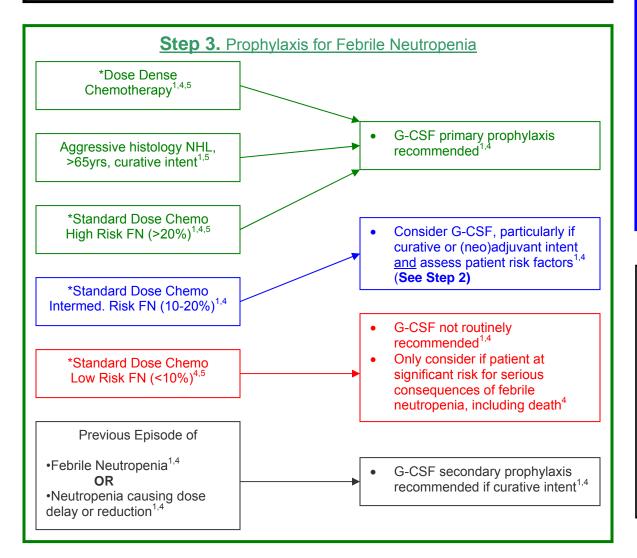


# London Health Sciences Centre Algorithm for White Cell Growth Factor (G-CSF) Support

# **Step 1**. Evaluate patient for risk of febrile neutropenia (FN) prior to each cycle<sup>4,5</sup>

## Review:

- chemotherapy regimen<sup>1,4,5</sup>
  patient risk factors<sup>1,4,5</sup>
- treatment intent (curative vs. palliative)<sup>1,4,5</sup>



# Step 2. Assess Patient Risk Factors 1,4,5

In addition to the chemo regimen, these factors may increase the risk of FN<sup>1,4,5</sup>

- age > 65 years  $^{1,4,5}$
- poor PS (ECOG >2)<sup>1,4,5</sup>
  poor nutritional status<sup>1,4,5</sup>
- bone marrow involvement<sup>1,4,5</sup>
  advanced disease<sup>1,5</sup>
- other serious co-morbidities 1,4,5 (i.e. diabetes, CVD, COPD, etc.)
- extensive prior treatment<sup>1,4</sup>
- number of myelosuppressive agents used (>2)<sup>4</sup>
  presence of open wounds or active infections<sup>1,4,5</sup>
- concomitant medications<sup>4</sup>
- •female gender<sup>5</sup>
- Hb<120 q/L<sup>5</sup>

## **G-CSF DOSING**

Filgrastim (Neupogen) 5mcg/kg/day daily SC<sup>2,4</sup> (rounded to nearest vial size: 300mcg or 480mcg)<sup>2,4</sup>

- Start 24-72 hrs after chemo & treat through post-nadir ANC recovery<sup>1,4</sup>
- Not to be given the same day as chemo<sup>2</sup>

## OR

Pegfilgrastim (Neulasta) 6mg once/cycle SC<sup>3,4</sup> (not routinely used in regimens < 2 weeks apart)

- Start 24 hrs after chemo<sup>1,3</sup>
- Not to be given the same day as chemo<sup>3</sup>

- The list is not comprehensive. There are other agents/regimens that have a high risk for the development of neutropenic complications.
- The exact risk includes agent, dose and the treatment setting (ie. treatment naïve vs. heavily pretreated patients).
- The chemotherapy regimen is only one component of the risk assessment. Patient risk factors should be evaluated as well. 1,4,5

## **EXAMPLES OF CHEMOTHERAPY REGIMENS WITH A HIGH RISK OF FEBRILE NEUTROPENIA (>20%)**<sup>4</sup>

#### Bladder

- TC (paclitaxel, cisplatin)
- MVAC (methotrexate, vinblastine, doxorubicin, cisplatin)

#### **Breast Cancer**

- Dose Dense AC-T\* (doxorubicin, cyclophosphamide, paclitaxel)
- AT (doxorubicin, paclitaxel)
- TAC (docetaxel, doxorubicin, cyclophosphamide)

#### Cervix

TC (paclitaxel, cisplatin)

#### Gastric/Head & Neck

• DCF (docetaxel, cisplatin, fluorouracil)

## Non Small Cell Lung Cancer

DP (docetaxel, carboplatin)

## Non-Hodgkin's Lymphoma

- CHOP 14
- DHAP
- ESHAP

#### **Ovarian Cancer**

- Topotecan
- Paclitaxel
- Docetaxel

### **Testicular Cancer**

• VIP (vinblastine, ifosfamide, cisplatin)

\*In general, dose dense regimens require growth factor support for chemotherapy administration<sup>1,4,5</sup>

# **EXAMPLES OF CHEMOTHERAPY REGIMENS WITH AN INTERMEDIATE RISK OF FEBRILE NEUTROPENIA (10-20%)**<sup>4</sup>

## **Breast**

- FEC-D (fluorouracil, epirubicin, cyclophosphamide, docetaxel)
- FEC 100 (fluorouracil, epirubicin, cyclophosphamide)
- Docetaxel
- AC (doxorubicin, cyclophosphamide)
- Gemcitabine, carboplatin

#### **Colon Cancer**

• FOLFOX (fluorouracil, leucovorin, oxaliplatin)

# Non-Hodgkin's Lymphoma

CHOP-R

# Non Small Cell Lung Cancer

- Cisplatin, paclitaxel
- Cisplatin, docetaxel
- Docetaxel, gemcitabine
- Vinorelbine, cisplatin

# Small Cell Lung Cancer

- Cisplatin, topotecan
- Etoposide, carboplatin

## **References**

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- 2. Neupogen Canadian product monograph, 2007
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- 4. NCCN Myeloid Growth Factor Practice Guidelines in Oncology, v1 2008; http://www.nccn.org/professionals/physician\_gls/PDF/myeloid\_growth.pdf
- 5. Kouroukis CT, Chia S, Verma S, Robson D *et al.* Canadian Supportive Care Recommendations for the management of neutropenia in patients with cancer. *Current Oncology* 2008; vol 15; no 1:9-23

This algorithm developed by the following pharmacists: L. Sax & K. Levac (London Regional Cancer Program), A. Granic & M. Abdallah (Grand River Regional Cancer Centre) and T. McFarlane (Cambridge Memorial Hospital). *Endorsed by LRCP STPT, October 2008*