

# Audit of Febrile Neutropaenic Episodes in Patients undergoing High dose Adjuvant Chemotherapy for Breast Cancer at the Christie Hospital

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## Background

High dose anthracycline and taxane based chemotherapy for breast cancer improves outcomes. These regimes increase the risk of febrile neutropaenia (FN). Trial data suggests that the risk of FN in the commonly used adjuvant regimes is below the level that warrants the use of primary prophylaxis with G-CSF. However, clinical experience at The Christie suggests that the risk of FN in our patients is much higher. We therefore assessed the incidence of FN and the effect of G-CSF usage in patients receiving FEC-100, FEC-T and E-CMF at the Christie. We assessed whether current practice of G-CSF use is satisfactory according to ASCO and EORTC guidelines.

	Percentage of Febrile Neutropenia	Trial
FEC-100	8.4%	PACS 01 2006 <sup>1</sup>
FEC-T	11.2%	PACS 01 2006 <sup>1</sup>
Epi-CMF	14%	NEAT 2006 <sup>2</sup>

## Standards:

ASCO guidelines 2006 recommend primary prophylaxis with G-CSF for chemotherapy regimes if risk of FN in the range of 20% or higher.<sup>3</sup>  
EORTC guidelines 2006 recommend primary prophylaxis With G-CSF if risk of FN is greater than 20%, or between 10-20% with additional risk factors.<sup>4</sup>

## Methods

Case notes of 152 patients receiving neo-adjuvant and adjuvant chemotherapy for breast cancer during 2008 at the Christie hospital were screened for inclusion into the audit. We aimed to include 50 patients for each regime. The notes of 4 patients were excluded as they actually had regimes not being assessed.

Definition of Febrile Neutropenia Used: Fever > 37.5°C with ANC <1

These case notes were retrospectively assessed recording:

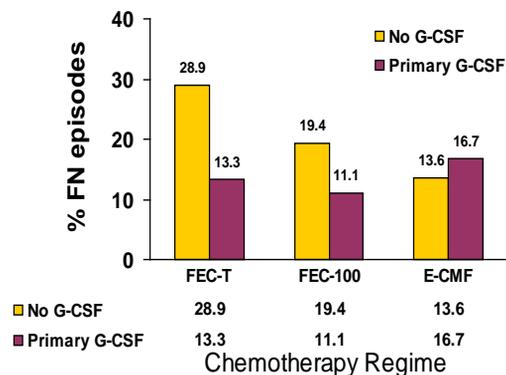
- Patient demographics
- Staging, Histological Grading and hormone receptor status
- Medical co morbidities and performance status
- Chemotherapy regime used
- Episodes of febrile neutropenia
- Use and type of prophylactic G-CSF used (primary and secondary)
- The need for dose delays or dose reductions of chemotherapy
- Need for ICU/HDU admissions
- Outcomes i.e.continuation of chemotherapy, cessation of chemotherapy and death

## Patient Demographics

Age range: 27-70 years (median 47). 100% women  
Treatment intent: Adjuvant 112 (76%), Neo-adjuvant 36 (24%)  
55% women ER positive, 43% PR positive, 29% HER-2 positive  
Staging: T1 26%, T2 47%, T3-4 27%  
24% node negative, 57% node positive and 20% not stated

## Results

Febrile Neutropaenic Episodes- no G-CSF vs primary prophylaxis with G-CSF



## Conclusions and Recommendations

- When using FEC-100 or FEC-T the risk of FN is in the region of 20%, this is markedly reduced with the use of primary G-CSF.
- **We therefore recommend that primary prophylaxis with G-CSF is routinely used when using FEC-100 or FEC-T.**
- There is an apparent increase in FN episodes when primary G-CSF is used with E-CMF, this is likely due to the fact that the patients who received primary G-CSF and E-CMF were part of the TACT2 trial and had accelerated Epirubicin.

## Future Plans

- Presentation of audit at trust morbidity and mortality meeting in May 2010 to ensure trust-wide implementation of results.
- To discuss results with Medicines Committee.
- Re-audit in early 2011 to ensure implementation.

### References

1. PACS 01 Trial, Roché et al, JCO 2006
2. NEAT, Poole et al, NEJM 2006
3. ASCO guidelines 2006
4. EORTC guidelines 2006, European Journal of Cancer