Adverse events

GUIDELINE ADHERENCE

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TRIAL SUMMARY: Follow the guidelines

Liu SL, Pauls M, Zhao Y, et al. Guideline adherence matters: rates and consequences of non-adherence to antiemetic practice guidelines. Canadian Association of Medical Oncology, Abstract 50, April 27, 2017, Toronto

This provincial retrospective chart review sought to evaluate the proportion of patients treated with highly or moderately emetogenic chemotherapy (HEC or MEC) who received antiemetic regimens according to practice guidelines, and assess rates of chemotherapy-induced nausea and vomiting (CINV). Adult patients (n=262) with a solid malignancy at any stage who received their first cycle of HEC or MEC at the Nova Scotia Cancer Centre (NSCC) between February and July, 2016, were included. Patient, disease and treatment data were obtained to assess adherence to the 2010 Multinational Association of Supportive Care in Cancer (MASCC)/European Society for Medical Oncology (ESMO) Antiemetic Guidelines, and identify rates of CINV based on the 2009 Common Toxicity Criteria version 4. A total of 80 patients (30.5%) received HEC (including adjuvant chemotherapy [AC] regimens) and 182 (69.5%) received MEC. The most common HEC and MEC were cisplatin and carboplatin, respectively.

Results: The overall rate of adherence to antiemetic guidelines was 64.1%, and there was a statistically higher rate of nonadherence to antiemetic guidelines with HEC as opposed to MEC (p<0.0001). In 73 of the 94 cases where guidelines were not followed, patients were receiving a HEC regimen. In 83 cases, nonadherence was due to inadequate antiemetic combinations, most commonly the omission of a neurokinin-1 (NK1) antagonist. Rates of grade ≥1 nausea and vomiting were 40.4% and 14.5%, respectively, for the whole study group, with a significantly higher rate of grade ≥1 nausea and/or vomiting in patients receiving HEC (p=0.01) whose nausea/vomiting was not treated according to guidelines. Nausea and vomiting occurred more in patients who did not use breakthrough medication (p=0.04).

IN BRIEF

Already known

- Antiemetic guidelines were developed in 2010 for both highly and moderately emetogenic chemotherapy (HEC and MEC)

What this study showed

- At one centre, adherence rate to antiemetic guidelines was 64.1%.
- There were higher rates of non-adherence to antiemetic guidelines in the treatment of patients receiving HEC and these patients experienced higher rates of grade ≥1 nausea and vomiting.

Next steps

- Identify and address reasons for non-adherence to guidelines

TRIAL SUMMARY: Febrile neutropenia

Corbett J, Jovanovic S, Ramjeesingh R, et al. An update on incidence of febrile neutropenia during adjuvant chemotherapy for breast cancer. Canadian Association of Medical Oncology, Abstract 38, April 27, 2017, Toronto

In this study, authors examined the uptake and real world effect of primary granulocyte colony-stimulating factor (GCSF) prophylaxis on febrile neutropenia (FN) rates among patients undergoing adjuvant chemotherapy for breast cancer, and compared results to a previously reported cohort study at the same centre. A prospective study was conducted on a cohort of patients (n=79) beginning adjuvant FEC-D (fluorouracil-epirubicin-cyclophosphamide and then docetaxel), TC (taxotere and cyclophosphamide), or FEC100 (fluorouracil-epirubicin-cyclophosphamide) chemotherapy between April and October 2010. Data was abstracted at each cycle for the entire duration of treatment for each patient. A retrospective cohort was then identified of patients (n=63) who began adjuvant chemotherapy between April and October 2014. A chart review was performed and the uptake and impact of primary GCSF on FN rates were examined relative to the prior cohort.

Results: When comparing the 2010 and 2014 cohorts, 36 (46%) vs 31 (49%) received TC, 37 (47%) vs 29 (46%) FEC-D, and 6 (7%) vs 3 (5%) FEC100. Of those who received TC, 17% vs 94% received primary prophylaxis, and 27.8% vs 10% developed FN. Of those who received FEC-D, 24% vs 72% received primary prophylaxis and 35.1% vs 10% developed FN. Of those who received FEC100, 1 (17%) vs 2 (67%) received primary prophylaxis and 0% vs 33% developed FN. Overall, the rate of primary prophylaxis was 20% in 2010 vs 84% in 2014, while rates of FN were 29.1% vs 11%. Increased use of primary prophylaxis during adjuvant chemotherapy for breast cancer has brought a decrease in the real-world rate of febrile neutropenia at our centre.

IN BRIEF

Already known

- Febrile neutropenia (FN) is a common side effect of adjuvant chemotherapy (AC) in breast cancer patients.
- Granulocyte colony-stimulating factor (GCSF) prophylaxis has been shown in clinical trials to prevent FN.

What this study showed

- In one cancer centre, the proportion of patients with breast cancer receiving GCSF prophylaxis increased from 20% in 2010 to 84% in 2014; the rates of FN were 29.1% in the 2010 cohort and 11% in the 2014 cohort.

Next steps

- Conduct further real-world studies of GCSF usage and FN rates in patients on different AC regimens.

COMMENTARY: Guideline-directed therapy has become increasingly common in many clinical settings. Guidelines can minimize harm to patients when they are applied appropriately.[1] In an era of rapidly evolving treatments for malignant disease, we are seeing more complex adverse events with therapy. While many guidelines exist to help navigate management of these adverse events, we also need to examine the extent to which guidelines are being followed, and uncover any barriers to adherence. This was done by two projects that were presented at the Canadian Association of Medical Oncology (CAMO) annual meeting.

Liu et al conducted a retrospective chart review of 262 patients to evaluate the rate and consequences of non-adherence to antiemetic guidelines.[2] They found an overall adherence rate of 64%. Nonadherence was found to be significantly higher with the use of HEC, which in breast cancer is either cisplatin or anthracycline/cyclophosphamide chemotherapy.[3] At this cancer centre, nonadherence was most often due to inadequate antiemetic combinations, predominantly omission of NK1 inhibitors.[2] Identifying the underuse of NK1 antagonists in HEC is especially important, since this guideline recommendation is supported by the highest level of evidence.[3]

Corbett et al examined the use of primary GCSF prophylaxis on rates of FN in patients undergoing adjuvant chemotherapy for breast cancer.[4] Their prospective study found that increased use of primary GCSF (from 20% to 84%) between 2010 and 2014 was associated with lower rates of FN (29% to 11%).[4] They found that insurance coverage impacted the type of GCSF used, and that patients without insurance coverage were more likely to receive no GCSF throughout their treatment.[4] The NCCN 2017 guidelines classify taxotere and cyclophosphamide (TC) chemotherapy as carrying a high risk for the development of FN, and include a category 1 recommendation for concurrent administration of prophylactic GCSF.[5] The 2016 Cancer Care Ontario recommendations classify FEC-D chemotherapy as high risk for FN, and also recommend that prophylactic GCSF be used.[6] Over 90% of patients in both 2010 and 2014 received one of these two regimens[4], meaning that GCSF prophylaxis could have been considered in nearly all cases.

Both presentations illustrate that adherence to guidelines can decrease adverse events in patients undergoing chemotherapy. They identified key barriers that oncologists should consider and aim to overcome.

References:

1. Woolf S, Grol R, Hutchinson A, Eccles M, Grimshaw J. Potential benefits, limitations, and harms of clinical guidelines. BMJ 1999;318(7182):527-30.
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3. MASCC and ESMO Consensus Guidelines for the Prevention of Chemotherapy and Radiotherapy-Induced Nausea and Vomiting: ESMO Clinical Practice Guidelines. F. Roila, A. Molassiotis, J. Herrstedt, M. Aapro, R. J. Gralla, E. Bruera, et al. On behalf of the participants of the MASCC/ESMO Consensus Conference Copenhagen 2015. Ann Oncol 2016; 27(suppl 5):v119-v133.

4. Corbett J, Jovanovic S, Ramjeesingh R, et al. An update on incidence of febrile neutropenia during adjuvant chemotherapy for breast cancer. Canadian Association of Medical Oncology, Abstract 38, April 27, 2017, Toronto.
5. Crawford J, Becker P, Armitage J, et al. NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) Myeloid Growth Factors. Version 1; 2017.
6. Cancer Care Ontario GCSF Recommendations 2016.