



## Positive Quality Intervention: Olanzapine use in Chemotherapy Induced Nausea and Vomiting (CINV)

**Description of PQI:** Olanzapine is an FDA approved atypical antipsychotic that blocks multiple neuronal receptors involved in nausea/vomiting pathways<sup>1</sup>. Olanzapine has been studied for breakthrough<sup>2</sup> CINV as well as prophylaxis of highly and moderately emetogenic regimens<sup>3,4,5</sup>. Additionally, olanzapine has been studied in replacement of NK1 receptor antagonists (i.e., aprepitant) as well as in addition to standard triplet prophylaxis regimens which include NK1 receptor antagonists<sup>4,5,6,7</sup>. The results of these trials suggest olanzapine is at least as effective as aprepitant and combination olanzapine with aprepitant has led to promising reports of CINV control. Based on the results from these various studies, national guidelines (National Comprehensive Cancer Network [NCCN] guideline on Antiemesis version 2.2017) recommend olanzapine 10 mg PO daily as an option within prophylaxis regimens for HEC and MEC chemotherapy regimens. Clinically, lower doses of 5mg and 2.5mg have been used in patients where sedation may be a concern.

**Background:** Nausea and vomiting remains a common and difficult to manage side effect of chemotherapy despite prophylaxis. These symptoms can often lead to a decreased quality of life, dehydration, and malnutrition. Historically, patients have been prescribed dexamethasone along with a 5HT3 antagonist (ex. ondansetron) to prevent nausea and vomiting. For patients receiving highly and often moderately emetogenic chemotherapy, and NK1 receptor antagonist, such as fosaprepitant, is added to the antiemesis regimen. Despite the use of these dual and triple agent preventative strategies as recommended by national guidelines, nausea and vomiting remains a significant complication of chemotherapy.

### PQI process:

Upon receipt of an order for a HEC or MEC chemotherapy regimen:

- Screen for appropriate antiemesis medications:
  - Dexamethasone
  - 5HT3 Antagonist
  - NK1 Antagonist
  - +/- Olanzapine
- If olanzapine is not initially included in the orders, consider recommending the addition of olanzapine 5-10mg PO daily Days 1 through 4 of chemotherapy.
- If the patient is elderly or over-sedated, consider using a lower dose upon initiation<sup>8</sup>.
- Use caution when prescribing olanzapine with metoclopramide or haloperidol, as this combination may lead to a higher risk of extrapyramidal symptoms.

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### Patient Centered Activities:

- Patient Compliance
  - Encourage patients to take this medication each day, as prescribed
  - This is particularly important for any patients receiving HEC or MEC regimens in the outpatient setting
- Patient Education
  - Explain CINV and the different medications that are being prescribed to help prevent nausea and vomiting
  - **Outline the reason patients take olanzapine on days 1 through 4 only\***
  - Olanzapine may be administered without regard to meals
  - Review common side effects with the patient
    - Drowsiness
    - Headache
    - Disturbed sleep
    - Extrapyramidal reaction
    - Increased appetite
    - Constipation
  - Drowsiness will potentially diminish over time

*\*Some multiple day HEC regimens may call for more than 4 days of olanzapine*

### References:

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