Chemotherapy-induced nausea and vomiting (CINV) and drivers of antiemetic prescribing: results of a qualitative in-practice study of clinicians from various settings

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OBJECTIVES

Chemotherapy-induced nausea and vomiting (CINV) has a significant clinical and economic impact.1 CINV can typically be prevented with guideline-recommended antiemetic regimens.2

National Comprehensive Cancer Network® (NCCN) antiemetic guidelines2

- 5-HT3 receptor blocker (5-HT3) + neurokinin-1 receptor blocker (NK-1) + steroid
- 5-HT3 + steroid; NK-1 if patients have an increased likelihood of getting CINV
- 5-HT3s and NK-1s come in many formulations (e.g., oral, IV, single-pill combination 5-HT3 + NK-1).
- In the United States (US), drivers of prescribers’ choice of antiemetics are not well understood. Insights into real-world practice may help inform optimal CINV prevention.

METHODS

Figure 1. Methods Overview

Developed Instrument

- Designed a semi-structured interview instrument with open-ended questions. Instrument reviewed by an external key opinion leader and pilot tested.
- Included open-ended questions focused on the following categories:
  - Respondent characteristics;
  - Practice patterns;
  - Product formulations;
  - Potential use of oral, single-pill combination 5-HT3 + NK-1.

Identified Experts

- Recruited seven US-based clinicians that regularly treat oncology patients.
- Included respondents who varied by specialty, practice setting, and geographic locations.

Conducted Interviews

- Conducted and recorded one-hour interviews via telephone.

Interpreted Responses

- Summarized each respondent’s responses. Compiled insights from all seven.

RESULTS

Interviewee Characteristics (Table 1)

- Respondents included:
  - 5 medical oncologists;
  - 1 internist;
  - 1 pharmacist;
  - 2 interviewees work in a community setting, 5 in an academic setting,
  - Practiced for an average of 6 years (median=6);
  - See an average of ~700 cancer patients per month (median=150);
  - Geographically distributed across US.

Table 1. Interviewee Demographic and Practice Characteristics

<table>
<thead>
<tr>
<th>Interviewee</th>
<th>Practice Setting</th>
<th>Specialty</th>
<th>Approximate Number of Years in Practice</th>
<th>Practice Focus (% of Practice, % of Patients)</th>
<th>(A) Approx. No. of cancer patients seen per month</th>
<th>(B) Approx. Proportion of IV treatment with chemotherapy</th>
<th>(C) Approx. Proportion of IV treated with CINV prophylaxis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviewee #1</td>
<td>Community Hematology-Oncology, Internal Medicine</td>
<td>2</td>
<td>90, 10</td>
<td>40</td>
<td>33</td>
<td>98</td>
<td></td>
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<tr>
<td>Interviewee #2</td>
<td>Academic Hematology-Oncology, Internal Medicine</td>
<td>12</td>
<td>90, 10</td>
<td>100</td>
<td>22</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Interviewee #3</td>
<td>Academic Oncology</td>
<td>8</td>
<td>90, 10</td>
<td>100</td>
<td>22</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Interviewee #4</td>
<td>Community Oncology</td>
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<td>90, 10</td>
<td>100</td>
<td>22</td>
<td>100</td>
<td></td>
</tr>
<tr>
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<td>90, 10</td>
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<td>22</td>
<td>100</td>
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<tr>
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<td>90, 10</td>
<td>100</td>
<td>22</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Interviewee #7</td>
<td>Academic, Out of Pharmacy</td>
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<td>90, 10</td>
<td>100</td>
<td>22</td>
<td>100</td>
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</tr>
</tbody>
</table>

General Observations

- All 7 interviewees are satisfied with current antiemetics.
- Guidelines such as NCCN are frequently used for determining the appropriate antiemetic to use with a given chemotherapy regimen.
- Most commonly used classes of antiemetics:
  - 5-HT3;
  - NK-1;
  - steroids.

Impact of Product Formulations on CINV Prevention Practice

> While all 7 clinicians typically use IV CINV prophylactics, they also see a role for oral agents.
> Scenarios in which clinicians may be prompted to use oral chemotherapy:
  - For home use;
  - If IV formulation is not listed in hospital formulary;
  - If patient does not have IV access;
  - If unable to interrupt current treatment (e.g. heparin drip);
  - When prescribing an oral chemotherapy (e.g. temozolomide);
  - If the pharmacist suggests oral medication instead.

Potential Benefits of a Single-dose Combination 5-HT3 + NK-1

> Combined administration of 5-HT3 and NK-1 (i.e. single product vs. multiple products);
> Ability to decrease chemotherapy chair time;
> Convenience (e.g., could be taken at home);
> Outpatient management of CINV;
> Use in patients with testicular and breast cancers (e.g. worry less about absorption).

Adherence to Oral Therapies

Table 2. Factors Influencing Patient Adherence to Oral Treatment

<table>
<thead>
<tr>
<th>Interview</th>
<th>Adherent (% of Patients Adhering to Single-pill Combination)</th>
<th>Would adherence be equivalent between an inpatient setting/infusion center and home?</th>
<th>Would adherence be higher at an inpatient setting/infusion center?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interview #1</td>
<td>No</td>
<td>No</td>
<td>Inpatient setting/infusion center</td>
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<td>Interview #2</td>
<td>No</td>
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<td>Interview #6</td>
<td>No</td>
<td>No</td>
<td>Inpatient setting/infusion center</td>
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<tr>
<td>Interview #7</td>
<td>No; if administered in a facility where the drug is readily available</td>
<td>No</td>
<td>Inpatient setting/infusion center</td>
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</tbody>
</table>

Adherence to Single-dose Combination 5-HT3 + NK-1

> Higher adherence in inpatient setting/infusion center vs. at home (Table 2).
> Estimated that 71% (median=73%) of patients would adhere to the single-pill if taken at home, ~98% (median=100%) would adhere if given in inpatient setting/infusion center (Figure 2).
> Estimated that 54% (median=53%) of patients would adhere to a 3- to 5-day multi-drug oral regimen if taken at home, 97% (median=100%) of patients would adhere if given in inpatient setting/infusion center (Figure 2).
> With higher adherence, clinicians anticipate lower rates of emergency room visits, office visits, and hospitalizations.

CONCLUSIONS

While clinicians in the US typically use IV formulations of prophylactic antiemetics, there is a niche patient population that benefits from oral regimens.

Patients receiving the fixed combination in place of separate oral 5-HT3 and NK-1 therapies may have improved adherence.

With higher adherence, interviewees expected healthcare utilization related to incident CINV would be lower, reducing costs and improving patient outcomes.

Key factors impacting the uptake of an oral, single-pill combination include data supporting the clinical effectiveness, pricing, and inclusion in guidelines and formularies.

REFERENCES