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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.

National Comprehensive Cancer Network® (NCCN) antiemetic guidelines[2]

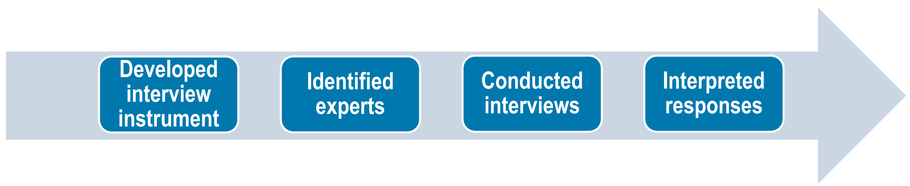
HEC highly emetogenic chemotherapy: 5-HT3 receptor blocker (5-HT3) + neurokinin-1 receptor blocker (NK-1) + steroid

MEC moderately emetogenic chemotherapy: 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

Interviewee	Practice Setting	Specialty	Approximate Number of Years in Practice	Practice Focus (% Outpatient, % Inpatient)	(A) Approx. # of cancer patients seen per month	(B) Approx. proportion of (A) treated with chemotherapy	Approx. proportion of (B) treated with CINV prophylaxis
Interviewee #1	Community	Hematology-oncology, Internal Medicine	2	90, 10	400	33%	90%
Interviewee #2	Academic	Hematology-oncology, Internal Medicine	12	90, 10	100	33%	100%
Interviewee #3	Academic	Oncology	8	95, 5	130	92%	100%
Interviewee #4	Community	Oncology	1	85, 15	160	75%	65%
Interviewee #5	Academic	Oncology	3	67, 33	150	65%	100%
Interviewee #6	Academic	Internal Medicine	6	0, 100	10	30%	50%
Interviewee #7	Academic	Doctor of Pharmacy	10	98, 2	4,000	75%	80%

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 an oral product:
  – 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 over IV.

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

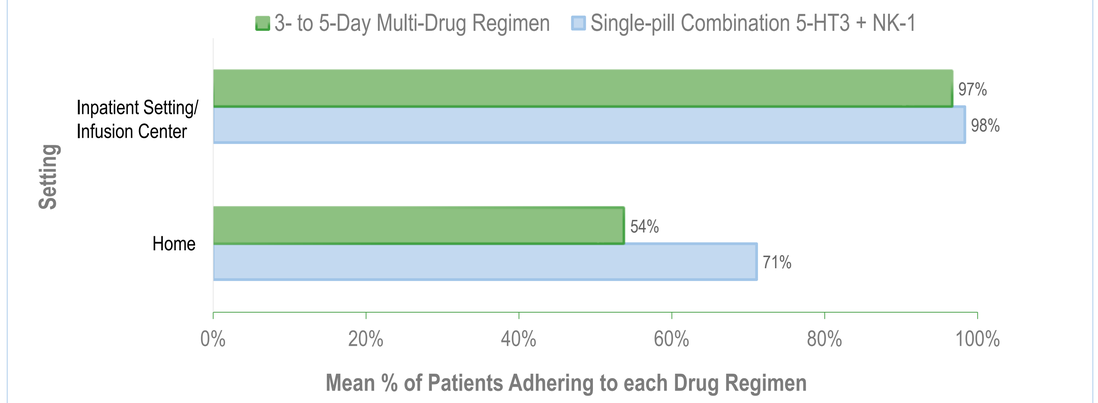
Table 2. Factors Influencing Patient Adherence to Oral Treatment

Interviewee	Assume 100% adherence to single-pill combination?	Would adherence be equivalent between an inpatient setting/infusion center and home?	Would adherence be higher at an inpatient setting/infusion center or home?
Interviewee #1	No	No	Inpatient setting/infusion center
Interviewee #2	No	No	Inpatient setting/infusion center
Interviewee #3	No	No	Inpatient setting/infusion center
Interviewee #4	No	No	Inpatient setting/infusion center
Interviewee #5	No	No	Inpatient setting/infusion center
Interviewee #6	No	No	Inpatient setting/infusion center
Interviewee #7	Yes, if administered in a facility where the drug is easily available	No	Inpatient setting/infusion center

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.

Figure 2. Adherence to Single-pill Combination 5-HT3 + NK-1 vs. 3- to 5-Day Multi-Drug Regimen



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

1. Hesketh PJ. Prevention and treatment of chemotherapy-induced nausea and vomiting in adults. UpToDate. Published Aug 4, 2017.
2. NCCN Guidelines® & Clinical Resources. NCCN Drugs & Biologics Compendium®. Accessed Aug 20, 2017.

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