Antiemetic effectiveness and safety of aprepitant in patients with hematologic malignancy receiving multiday chemotherapy

BACKGROUND

- Nausea and vomiting is one of the most problematic symptoms for patients undergoing chemotherapy.
- Aprepitant, a neurokinin-1 receptor antagonist, has been shown to be effective for controlling chemotherapy induced nausea vomiting (CINV).
- Aprepitant in combination with a 5-HT3 antagonists and dexamethasone for patients taking multiday chemotherapy has be shown to be effective and safe in studies.
    - However, it has not been studied in patients receiving multiday chemotherapy for hematologic malignancies.

OBJECTIVE

- To evaluate the antiemetic effect and safety of aprepitant in patients with hematologic malignancies receiving multiday chemotherapy.

METHODS

- **Design:** Single site, case -controlled, retrospective study
    - Data collected from electronic medical record system
- **Inclusion Criteria:** 20 years of age or older and receiving moderately to highly emetogenic multiday chemotherapy for various types of hematologic malignancies at the hospitals department of hematology.
- **Exclusion Criteria:** underwent high-dose chemotherapy before stem cell transplantation or patients that have nausea or vomiting before study entry.
- 82 patients
    - Aprepitant Group (42 patients) → received aprepitant and granisetron as antiemetic prophylaxis between April 1 and December 31, 2012
        - Day 1: Aprepitant 125 mg was administered orally 60-90 minutes before administration of the first moderately to highly emetogenic anticancer drugs
        - Day 2: 80 mg oral dose of aprepitant administered in the morning for up to five days.
    - Control Group (40 patients) → received granisetron alone between March 1, 2009 and March 21, 2010, before the introduction of aprepitant
    - Both groups received IV administration of granisetron 3 mg, 30 minutes daily before administration of chemotherapy.
    - Corticosteroids were administered for disease treatment only in some regimens
- **Primary Outcome Measures:**
    - % of patients who achieved complete response (CR) from day 1 of moderately to highly emetogenic chemotherapy until four days after the last dose was administered.
        - CR = no vomiting and no use of recue medication
- **Secondary Outcome Measures:**
    - % of patients without nausea and vomiting and the frequencies of other adverse drug events
- **Data handling**
    - Data handling method was intent-to-treat

RESULTS

- **Primary Outcome Measure:** There was a significant difference between the percentages of patients who achieved CR in the aprepitant group. (76% versus 50%, p = 0.013)
- **Secondary Outcome Measure:**
    - There was a significant difference between the percentages of patients without vomiting in the aprepitant group compared to the control group. (88% versus 58%, p =0.002)
    - There was not a significant difference between the percentage of patients without nausea between the groups (31% versus 18%, p = 0.180)
- **Authors Conclusion:** The addition of aprepitant to granisetron increased the antiemetic effect without influencing ADEs in patients treated with moderately to highly emetogenic multiday chemotherapy for hematologic malignancies.

STRENTGHS

- Baseline characteristics' of the treatment groups were similar
- Appropriate doses of the drugs were administered in both study groups
- Researchers accurately explained their limitations or weakness in the discussion section

LIMITATIONS

- Retrospective study design
- Study dependent upon accuracy and completeness of existing electronic medical records
- No data provided on rescue medication provided
- Possible pharmacokinetic s changes of chemotherapy agents due to the addition of aprepitant was not evaluated
- Researchers made a generalized statement that the addition of aprepitant has a better antiemetic effect then the control group when in fact it depended on the specific chemotherapy regimen that the patient was given

CONCLUSION

- Results showed that the addition of aprepitant to granisetron to specific chemotherapy regimens in hematologic malignancies improves antiemetic effect without causing adverse drug events.
- Future Research:
    - An experimental design study should be conducted to determine true efficacy and safety of aprepitant.

Reference: Uchida M, Ikesue H, Kato K, Inchinose K et al. Antiemetic effectiveness and safety of aprepitant in patient's hematologic malignancy receiving multiday chemotherapy. Am J Health-Syst Pharm. 2013 Feb;70:343-349.

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