INTRODUCTION: Chemotherapy-induced nausea and vomiting (CINV) remains a major adverse effect of cancer chemotherapy. Aprepitant, first NK1 antagonist, indicated for prevention of nausea and vomiting during cisplatin-based highly emetogenic chemotherapy, has obtained an extension of indication to moderately emetogenic chemotherapy (MEC) in combination with corticoids and 5-HT3 antagonist on day 1, and one dose on day 2 and 3. Aprepitant demonstrated a superior efficacy in the complete response (no vomiting and no rescue treatment) over standard therapy (corticoid and 5-HT3 antagonist on day 1, and 5-HT3 antagonist alone on day 2 and 3) [5.3% vs 4.2%, p = 0.015]. Numerically more patients in the aprepitant group reported minimal or no impact of CINV on daily life (43.5% vs 55.6%, p = 0.19).

OBJECTIVES: To assess the budget impact for the French Health Insurance funds of aprepitant specifically referred to this new indication.

METHODS

1. Definition of the patient population

Patients receiving MEC associated with corticoids prophylaxis including corticoid and a 5-HT3 antagonist.

MECs were defined according to the recommendations of the Multinational Association of Supportive Care in Cancer (MASCC).

2. Costs of antiemetic treatments

Patients were split into 2 groups: those receiving a 5-HT3 antagonist both in the acute and the delayed phases and those receiving a 5-HT3 antagonist only during the acute phase.

For each group, cost of antiemetic therapy per cycle was calculated.

Two types of costs were calculated:

- The percentage of use of aprepitant within patients treated with MEC and the percentage of use of aprepitant in the delayed phase as a function of % of use of 5-HT3 antagonists in the delayed phase respectively 30% and 70%.

- The percentage of use of aprepitant in the delayed phase as a function of % of use of 5-HT3 antagonists respectively 25% and 75%.

3. Budget impact model

The budget impact model was built over a four-year period (2006-2009).

2.1 Base-line assumptions

- Number of MEC cycles: standard antiemetic treatment with a 5-HT3 antagonist remains stable over the study period.

- During the acute phase, 45% and 55% of patients receive aprepitant respectively in private/ambulatory care and public hospitals.

3.1 Base-line assumptions

- Hospital drug costs were based on the listing prices on which some discounts may be confidentially applied.

3.2 Calculations

- The impact budget due to aprepitant does not exceed a net increase of 3% per year.

3.3 Sensitivity analyses

- Use of aprepitant in MEC patients: 25%, 30%, 35% and 40% respectively the first, second, third and the fourth year.

RESULTS

1. Patient population

Among patients receiving antiemetic prophylaxis including corticoid and a 5-HT3 antagonist during MEC, 4 subgroups were identified based on drug utilization during both acute and delayed phases.

Without antiemetics

5-HT3 antagonists in acute phase only

5-HT3 antagonists in delayed phase only

5-HT3 antagonists in acute and delayed phases

5.400 cycles

4.600 cycles

2. Costs of antiemetic treatments

Average cost of 5-HT3 antagonists per cycle (€) (2004) according to the type of antiemetic regimen per cycle.

Hospital listing price

Without aprepitant

With aprepitant

Net budget impact: Hospitals

With aprepitant

Without aprepitant

% of increase

Hypothesis

% of use in MEC cycles

% of use of the delayed phase

% of use in MEC cycles

% of use of the delayed phase

4. Sensitivity analyses

4.1 With an increase of use in MEC cycles

Euros (000)

Without aprepitant

With aprepitant

Net budget impact

% of increase

4.2 With a 10% discount of the price of 5-HT3 antagonists

Euros (000)

Without aprepitant

With aprepitant

Net budget impact

% of increase

4.3 A variation of the split between private/ambulatory care and public hospitals of aprepitant utilization

Euros (000)

Without aprepitant

With aprepitant

Net budget impact

% of increase

Study limitations:

- This budget impact analysis was only based on drug cost and does not take into consideration the reduction of health care resources related to better control of vomiting. From this perspective the results can be considered as conservative.

- Hospital drug costs were based on the listing prices on which some discounts may be confidentially applied.

- There is no historical basis for reliably estimating penetration rate of a new technology.

CONCLUSION: For an assumed net budget increase of less than 3%, use of aprepitant significantly reduce vomiting and improve activities of daily living in cancer patients compared to a standard therapy comprising 5-HT3 antagonists in MEC.