AIM

To compare the total cost of subcutaneous (SC) vs. intravenous (IV) administration of trastuzumab (TRA) for the treatment of HER2+ breast cancer patients from Republic of Macedonia.

BACKGROUND

- The rising cost of cancer care has progressively become highly sustainable for health care systems worldwide.
- Trastuzumab (Herceptin®) - humanized IgG1 monoclonal antibody is standard treatment for patients with early and with metastatic HER2-positive breast cancer.
- SC-TRA, co-formulation of TRA with recombinant human hyaluronidase - available in EU since August 2013
- The average direct cost associated with the patient transport to the oncology center is €2.94 vs €8.81.
- 300 observed episodes (224 SC-TRA and 76 IV-TRA) from two oncology clinics

METHODS

DATA COLLECTION

- Total of 169 HER2+ patients (mean weight=74.29kg)
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- - adjuvant vs. metastatic treatment = 112 vs.37 patients
- - SC-TRA vs. IV-TRA vs. SC-TRA =117 vs. 35 vs. 17 patients
- - 300 observed episodes (224 SC-TRA and 76 IV-TRA) from two oncology clinics
- - Number of communities was 32
- - Time & Motion analysis
- - measured the time in motion for activities associated with TRA preparation, administration, and administration during clinic visit, using standard task list and a stopwatch
- - recorded all equipment (quantity and type) used to prepare and administer TRA

COST ASSESSMENT

- Cost-minimization model was developed for estimation of cost savings associated with delivery of SC-TRA compared with IV-TRA
- - Healthcare (HC) resources - drug treatment, patient chair time, active HC professional time
- - Non health care resources-patient transport to the clinic
- - Unit costs obtained utilizing official (government and hospital pharmacy) publically available data
- - No discount rate applied

RESULTS

TIME AND MOTION ANALYSIS

Comparison of mean preparation and administration/application time for SC-TRA vs. IV–TRA is presented in Table 1.

- The total mean HCP time was markedly lower when the SC formulation was used (7.55 min vs 54.52 min for IV administration) and resulted in 47 min time saving per patient cycle.
- The mean overall cost associated with preparation and administration of IV-TRA was higher than SC-TRA (€12.998 vs. €12.36). Use of SC-TRA leads to mean cost saving of €12.136 per patient cycle versus IV–TRA.
- The IV administration of Herceptin® is associated with 2.1% increase in total cost per patient treatment, compared to SC–TRA.
- The potential saving of SC-TRA per patient over the full course of treatment is €641.38.
- Compared to IV formulation, the administration of SC was associated with lower:
- - mean HCP time: 24.6 minutes vs 92.6 minutes,
- - consumable costs: €2.94 vs €8.81.

SENSITIVITY ANALYSIS

- Base case value was €29,844.4; total cost per patient treatment with SC Herceptin
- Set at ±5% and ±10%
- Results of the model were most sensitive to patient weight (Fig 2).
- The other parameters did not affect the robustness of the base case assumptions.

CONCLUSION

- Subcutaneous administration of Herceptin® can be time and cost saving therapy for HER2+ breast cancer patients from R. Macedonia
- Switching therapy from IV to SC administration of trastuzumab is a potentially low-cost measure and can reduce expenditures without impairing the quality of patients care.

REFERENCES


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