

SPECIAL ARTICLE

Costs differences among monoclonal antibodies-based first-line oncology cancer protocols for breast cancer, colorectal carcinoma and non-Hodgkin's lymphoma

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Summary

Purpose: To assess and compare the costs of first-line monoclonal antibodies (mAbs) treatment protocols in breast cancer, non-Hodgkin lymphoma and colorectal carcinoma in South-Eastern Europe.

Methods: A retrospective, bottom-up case series study design was implemented with one-year time horizon and payer's perspective. The study sample size was 265 patients (breast cancer, N=137; colorectal cancer, N=44; and non-Hodgkin lymphoma, N=84), while treatment protocols included adjuvant mAbs: trastuzumab (N=137), bevacizumab (N=28), rituximab (N=16) and cetuximab (N=84). ICD-10 related resources use included history of medical services utilization, chronology (time out of service provision) and unit consumption of examinations, drugs prescribed, imaging, radiotherapy and surgical procedures provided etc., direct medical and lost productivity costs (€) across treatment groups during 2010-2013.

Results: The average length of observation was 125±97 days per patient. Total mean direct and indirect costs of

care were: trastuzumab for breast cancer group € 17,740 per patient; bevacizumab for colorectal carcinoma group €8,775 per patient; cetuximab for colorectal carcinoma group € 27,181 per patient; and rituximab for non-Hodgkin lymphoma group €19,431 per patient. An average mAbs-treated patient incurred €17,897 costs of medical care. The total combined budget of these 330 patients was €4,742,775.

Conclusions: The use of mAbs strongly correlated with high costs in first-line cancer medical care and dominated other cost domains. Cetuximab-based treatment protocols in colorectal carcinoma patients was substantially more expensive compared to trastuzumab (C50), bevacizumab (C20), and rituximab (C80) alternatives. Extremely high costs of mAbs are the key-issue for Eastern European policy makers by crossing the upper limits of affordability in middle-income economies.

Key words: cancer, costs, monoclonal antibodies, Serbia, resource use

Introduction

Although the clinical efficacy of most mAbs is well documented in clinical trials [1], the heavy budget impact of these medicines can be felt in most European markets [2]. During the past few decades the overall pace of pharmaceutical expenditure growth in Europe was significantly

faster compared to national gross domestic product (GDP) growth [3]. This is in line with similar market trends noticed in the United States [4] and Japan [5]. The arrival and marketing of novel targeted immunotherapy, although therapeutically promising in autoimmune disorders, for cancer it has put a challenging policy challenge on authorities in terms of reimbursement issues and

