Health technology assessment of Bevacizumab compare with combination of Bevacizumab with Erlotinib for treatment of patients with metastatic colorectal cancer

Sara Kaveh[a]*, Parvin Ebrahimi[b] , Aziz Rezapour[c] , Masoud Mozafari[d] , Kourosh Sayehmiri[e]

Authors' Affiliations:
[a] MSc Student, Department of Health Services Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran
[b] PhD, Assistant Professor, Department of Health Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran
[c] PhD, Health Management and Economics Research Center, Iran University of Medical Sciences, Tehran, Iran.
[d]PhD pharmacology, Naft hospital. Shiraz, Iran.
[e] PhD, Associated Professor of Biostatistics, Prevention Center of Social-Mental injuries, Ilam University of Medical Sciences.

Abstract Presenter:
Sara Kaveh, MSc Student, Department of Health Services Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran.
Sarakaveh1393@gmail.com

**correspondence:*
Sara Kaveh, MSc Student, Department of Health Services Management, School of Health Management and Information Sciences, Iran University of Medical Sciences, Tehran, Iran (Corresponding Author).*
Sarakaveh1393@gmail.com

Abstract

Introduction: Effective and efficient treatment for patients with metastatic colorectal cancer that can increase survival rate with limited side effects, is important. The purpose of this study was health technology assessment of Bevacizumab compare with combination of Bevacizumab with Erlotinib for treatment of patients with metastatic colorectal cancer.

Methods and Results: In the present investigation first a systematic review on finding the studies was conducted. To reach this goal a comprehensive search in PubMed, Cochrane Library, Scopus, CRD, American Society of Clinical Oncology and European Society for Medical Oncology databases using the PICO based keywords was performed. Then, a retrieved study by means of two independent and expert reviewer during several steps (based on title, abstract and full-text, excluding of duplicated or unrelated cases) was chosen and non-qualified studies was exiled from the study. After that, 20 chosen randomized trial studies were evaluated by two experienced evaluators by Cochrane tool in terms of types of Bias. Eventually obtained data from the investigation was meta-analyzed by Revman5.3 software and safety, effectiveness and economical evaluation of the device were studied based on this data. To calculate the expenses of Bevacizumab and Erlotinib, Cost-effectiveness Analysis with the perspective of the service provider in the public sector was performed. In total, three randomized controlled trials with 682 patients met the inclusion criteria. The combination of Bevacizumab with Erlotinib for maintenance therapy of patients with metastatic colorectal cancer improved progression free survival by 0.19 and overall survival by 0.22. Degree three and four side effects of developed during treatment were limited and manageable. The combination of the two drugs was cost effective from the perspective of the service provider.

Conclusions: Based on current evidence, prescribing the combination of Bevacizumab and Erlotinib in the maintenance treatment of metastatic colorectal cancer patients is cost effective from the perspective of service provider in the public sector, and the use of this combination in the health system is economically viable.
Key words: Bevacizumab, Erlotinib, Colorectal cancer, Health technology assessment, Economic evaluation, Cost effectiveness