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Comparative Effectiveness and Safety of Monoclonal Antibodies for mCRC

Wânia Cristina da Silva, Francisco de Assis Acurcio, Brian Godman, Vânia Eloisa de Araujo, Elias Magalhães Abreu Lima, Jessica Barreto dos Santos, Michael Ruberson Silva, Paulo Henrique Ribeiro Fernandes Almeida, Amanj Kurdi, Mariângela Leal Cherchiglia, Eli Iola Gurgel Andrade

Abstract

Introduction: Biological medicines are increasingly used in combination with chemotherapy for patients with metastatic colorectal cancer (mCRC), resulting in increased progression-free survival (PFS). However, concerns remain over the extent of their effect on overall survival (OS) given the high costs of these monoclonal antibodies (MoAbs) (bevacizumab, cetuximab and panitumumab) and their safety. Published studies suggest no major differences in effectiveness and safety between the MoAbs; however, differences in costs with cetuximab more expensive than bevacizumab by 127% in Brazil and more expensive than panitumumab by 112%, with panitumumab more expensive than bevacizumab by 6%. Since there is rising litigation in Brazil in order to access these 3 MoAbs as they are not currently reimbursed, we wanted to compare their effectiveness and safety associated with chemotherapy or chemotherapy alone in patients with mCRC to provide future guidance to the judiciary and the healthcare system. **Method:** A systematic review and meta-analysis based on cohort studies published in databases up to November 2017. Effectiveness measures include PFS, post-progression survival (PPS), RECIST (Response Evaluation Criteria In Solid Tumors), response rates, metastasectomy rates, OS and safety. We also evaluated the methodological quality of the studies. **Results:** Overall, 21 observational cohort studies were included in the review. There were statistically significant and clinically relevant benefits in patients treated with bevacizumab versus those not treated with bevacizumab (no bevacizumab arm) mainly around PFS, PPS, metastasectomy rates and OS, but not for disease control rates. However, bevacizumab increased toxicities and there were concerns with the heterogeneity of the studies. **Conclusion:** The results suggested an advantage in favour of bevacizumab for a number of outcome measures and costs in patients with mCRC. However, this advantage may be only clinically modest for bevacizumab. This though has to be weighed against the serious adverse events associated with bevacizumab, especially severe hypertension and gastrointestinal perforations.

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