

Cost Minimization Analysis (CMA) of XELOX versus MFOLFOX6 in the treatment of colorectal cancer in an university hospital in Brazil

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Introduction: Cancer worldwide is a public health problem with a perspective of 20 million new cases by 2025. Colorectal cancer (CRC) is ranked the third most incident tumor in the world and the fourth in Brazil. **Objectives:** The purpose of this paper was to evaluate the effectiveness and to conduct the economic assessment of XELOX and mFOLFOX6, two chemotherapeutic protocols used in adjuvant and metastatic treatment of colorectal cancer in stage III and in the palliative treatment of colorectal cancer stage IV, in a university hospital located at Rio Grande do Sul. **Methodology:** We conducted a systematic reviews using Pubmed, Science Direct and Google Scholar databases to analysis randomized clinical trials (RCT), systematic reviews or meta-analyses, comparing XELOX and FOLFOX in the adjuvant and/or palliative setting for CRC, among January 1st, 1995 and December 31, 2015. We also analyzed the quality of studies using the GRADE checklist. In cost analysis, we used the time-driven activity-based costing and microcosting method to identify expenses with medicines, materials, laboratory and imaging exams, outpatient and inpatient visits, human and administrative resources and to determine the individual cost per patient. In this study, we analysed medical records of the all patients (N:36) who began adjuvant or palliate treatment for CRC with one of the treatment protocols in the years of 2013 and/or 2014 in the our hospital. The information about direct medical costs were collected in the electronic medical record system. For the direct non-medical costs we used the financial reports. **Results:** We identified five studies: one RCT for adjuvant treatment and four meta-analyses, including three for metastatic and one for adjuvant treatments. These studies showed the therapeutic equivalence between XELOX and FOLFOX. The cost minimization analysis revealed an average cost for XELOX of R\$ 8,407.13 for adjuvant and R\$ 6,946.47 for palliative treatment, for mFOLFOX6 costs were of R\$ 9,925.98 and R\$ 8,036.95, respectively. Sensitivity analysis maintained the dominance of XELOX. The component that added the highest cost to the XELOX protocol was the cost of materials and medications, accounting for 84-85% of its cost, while for mFOLFOX6 the materials and medications accounted for 35-37%. The impact of each component on the treatments was similar to those demonstrated by other studies that evidenced the medications as main determinant of the XELOX cost, and the expenditure on personnel care for the preparation and administration as well as inpatient daily care as the main factors determining the cost of FOLFOX regimes. **Conclusion:** From a hospital perspective, XELOX is the least costly alternative in the treatment of CRC, however, further analyses with a higher number of patients and the inclusion of other cost components are necessary in order to confirm this.