

Cost Minimization Analysis (CMA) of XELOX versus MFOLFOX6 in the treatment of colorectal cancer in a public 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. Hence the economic impact of care for these patients is significant.

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 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 (TDABC) 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.

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. **Keywords:** XELOX, FOLFOX, colorectal cancer, cost minimization analysis, micro-costing.