

# Budgetary Impact Analysis of Regorafenib for the Treatment in Third and Fourth Lines of Metastatic Colorectal Cancer in Spain

González Flores E<sup>1</sup>, Vera García R<sup>2</sup>, Sabater Cabrera E<sup>3</sup>, Tirado Mercier E<sup>4</sup>, Granel Villalon M<sup>4</sup>

<sup>1</sup>Hospital Universitario Virgen de las Nieves, Granada, Spain, <sup>2</sup>Complejo Hospitalario de Navarra, Pamplona, Spain, <sup>3</sup>Pharmacoeconomics & Outcomes Research Iberia, Madrid, Spain, <sup>4</sup>Bayer Hispania S. L., Sant Joan Despí (Barcelona), Spain

## INTRODUCTION

Regorafenib has been recently approved and funded in Spain for the treatment of adult patients with metastatic colorectal cancer (mCRC) who have been previously treated with or are not considered candidates for available therapies.<sup>1</sup>

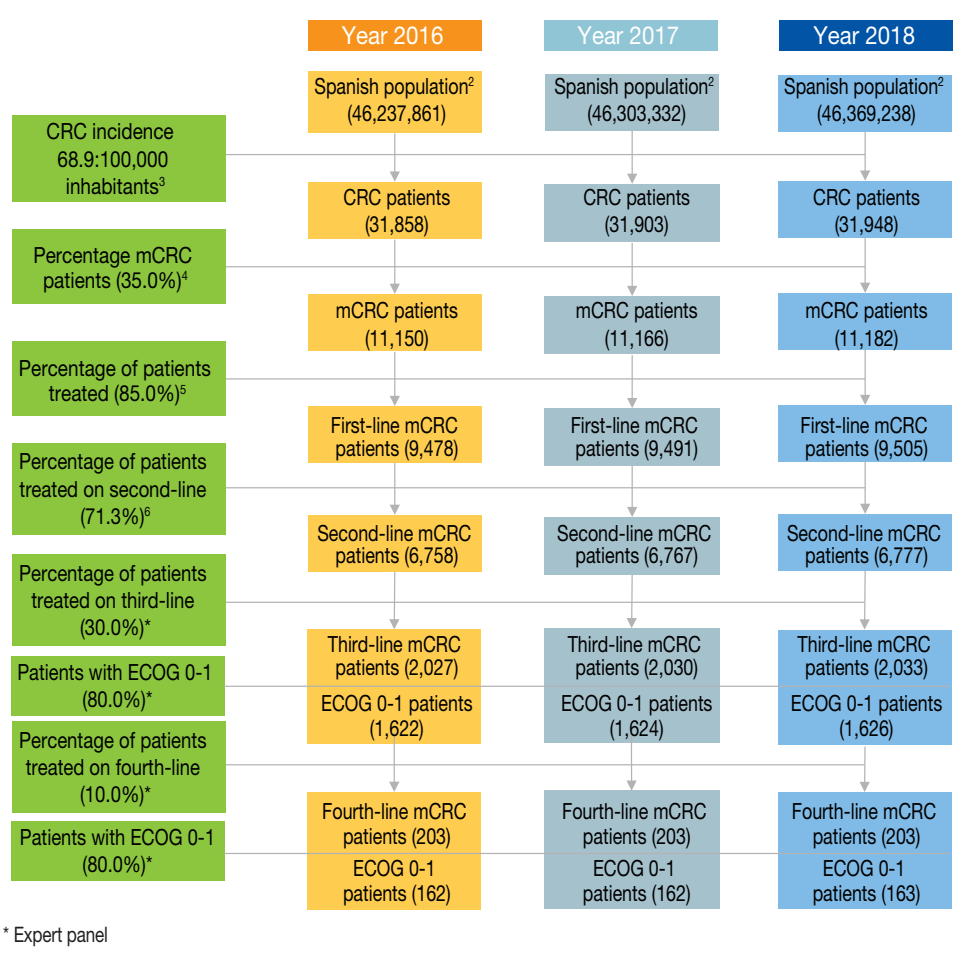
## OBJECTIVE

The aim of this analysis was to analyze the budget impact of the introduction of regorafenib for the treatment of mCRC in third and fourth lines in patients with an ECOG 0-1 and over a 3 years' time horizon.

## METHODS

- A budget impact model developed in Microsoft Excel was used to estimate healthcare costs for mCRC patients during a 3-year period, from the Spanish National Health (NHS) perspective.
- The target population was established based on national census information, epidemiological data, literature and expert panel information. The patient flow is shown in Figure 1.
- It was considered a 58% of male patients<sup>7</sup>. Mean weight considered was 73.71 kg<sup>8</sup> and mean body surface area considered was 1.825 m<sup>2</sup><sup>8</sup>.

Figure 1. Patient flow



- The therapies included as third and fourth lines by expert panel were: Cetuximab, Irinotecan + Cetuximab, Irinotecan + Panitumumab, mFOLFOX 6, Panitumumab, Raltitrexed, Regorafenib, Capecitabine, Capecitabine + Bevacizumab and Capecitabine + Oxaliplatin.
- A study on prescription pattern for mCRC treatment from the literature<sup>6</sup> was considered as the basis to be extended and updated by the expert panel (Figure 2).
- Estimation of total cost included: drug acquisition costs and administration cost associated with parenteral drugs. Drug acquisition cost based on ex-factory price (in EUR 2016)<sup>9</sup> applying a 7.5% of mandatory deduction<sup>10</sup>. For each administration, it was considered a Day-Hospital visit (€219.69 per visit)<sup>11</sup> (Table 1).
- No discounting of future costs was applied in the context of the budget impact analysis.

## REFERENCES

- Summary Product information of Stivarga®.
- Instituto Nacional de Estadística. Proyecciones de población 2014-2064. Población residente en España a 1 de enero, por sexo, edad y año.
- Globocan 2012. International Agency for Research on Cancer. World Health Organization.
- Fernández RD, Duch CG. Treatment costs for metastatic colorectal cancer. Farmacia Hospitalaria. 2007;31(1):67-72.
- López-Gómez M, et al. Long-term treatment of metastatic colorectal cancer with panitumumab. Clin Med Insights Oncol. 2012;6:125-35.
- Torres C, et al. Análisis de patrones de tratamiento y coste farmacológico en pacientes con cáncer colorrectal metastásico en un hospital general. Pharmacoecon Span Res Artic 2014; 11:85-96.
- Sánchez MJ, et al. Cancer incidence and mortality in Spain: estimates and projections for the period 1981-2012. Ann Oncol. 2010; 21(Suppl 3).
- Sacco JJ, et al. The average body surface area of adult cancer patients in the UK: a multicentre retrospective study. PLoS One. 2010 28;5(1): e8933.
- CGCOF Consejo General de Colegios Oficiales de Farmacéuticos.
- Real Decreto-ley 8/2010, de 20 de mayo.
- eSalud. Oblikue Consulting.

Figure 2. Proportions of therapies used

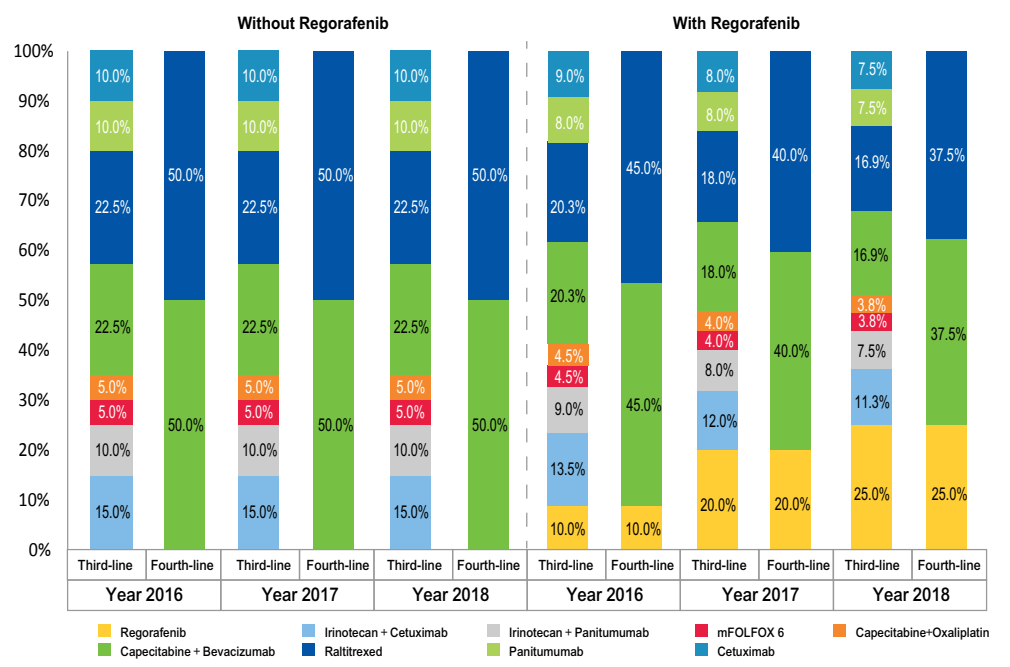


Table 1: Treatment costs

Treatments	Cycle length (days)	Cycles administered in third line*	Cycles administered in fourth line*	Third line Drug cost	Fourth line Drug cost	Third line administration cost	Fourth line administration cost
Regorafenib	28	2.8	2.8	€6,694.53	€6,694.53		
Cetuximab	14	5.5		€8,927.23		€1,208.27	
Irinotecan + Cetuximab	14	5.5		€9,316.58		€1,208.27	
Irinotecan + Panitumumab	14	5.5		€8,939.35		€1,208.27	
mFOLFOX 6	14	5.5		€1,728.43		€1,208.27	
Panitumumab	14	5.5		€8,549.99		€1,208.27	
Raltitrexed	21	3.5	3.5	€1,079.90	€1,079.90	€768.90	€768.90
Capecitabine	21	3.5		€412.10			
Capecitabine + Bevacizumab	21	3.5	3.5	€4,126.65	€4,126.65	€768.90	€768.90
Capecitabine + Oxaliplatin	21	3.5		€1,385.59		€768.90	

\* Expert panel

## RESULTS

- The cost of the patient treatment in third and fourth lines in the scenario without regorafenib was €10,853,469.87 in 2016, €10,868,837.91 in 2017 and €10,884,308.23 in 2018 (Table 2).
- The budget impact of the introduction of regorafenib represents an increase compared to the scenario without regorafenib of €108,964.72 (1.00%) in 2016, €218,238.02 (2.01%) in the 2017 and €273,185.82 (2.51%) in 2018.

Table 2. Budget impact results

	Year 2016	Year 2017	Year 2018
Scenario without regorafenib			
Drug cost	€9,125,450.06	€9,138,371.29	€9,151,378.53
Administration cost	€1,728,019.81	€1,730,466.61	€1,732,929.70
Total costs	€10,853,469.87	€10,868,837.91	€10,884,308.23
Scenario with regorafenib			
Drug cost	€9,407,216.76	€9,702,702.64	€9,857,796.77
Administration cost	€1,555,217.83	€1,384,373.29	€1,299,697.27
Total costs	€10,962,434.59	€11,087,075.93	€11,157,494.05
Incremental costs (scenario with vs without regorafenib)			
Drug cost	€281,766.70 (3.09%)	€564,331.35 (6.18%)	€706,418.24 (7.72%)
Administration cost	-€172,801.98 (-10.00%)	-€346,093.32 (-20.00%)	-€433,232.42 (-25.00%)
Total costs	€108,964.72 (1.00%)	€218,238.02 (2.01%)	€273,185.82 (2.51%)

## CONCLUSIONS

The introduction of regorafenib for the treatment of mCRC in third and fourth lines in patients with ECOG 0-1 would have a neutral budgetary impact in the Spanish setting.

