Colorectal cancer is the most common cancer in Spain, with nearly 32,250 cases reported in 2014.

Cetuximab and panitumumab are monoclonal antibodies that bind to the epidermal growth factor receptor (EGFR), which is over expressed in many tumors and is related with the uncontrolled division in cancer cells.

New biomarker data obtained from the CRYSTAL and FIRE-3 trials show that the efficacy is improved in patients with RAS wild-type (RAS WT) tumours treated with cetuximab.

RAS biomarkers help identify the patient group that is likely to benefit the most from anti-EGFR treatments.

### Methods

A literature review was realized with the aim of evaluating the overall survival (OS) in RAS wt mCRC patients in treatment with anti-EGFR monoclonal antibodies. The cost per life year gained (LYG) was calculated using the cost of the first line treatment from the hospital pharmacy point of view. It was based on the results of effectiveness in the published reviews for each therapy. The review of the specifications data sheets and clinical practice guidelines were used to establish the frequency of administration. Dose regimen was calculated considering the standard values for weight as 70kg and body surface as 1.79m².

### Results

#### Table 2. Overall survival and cost comparison.

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Biomarker</th>
<th>Difference in OS (Months)</th>
<th>Treatment pharmacological cost (LSP s/VAT)</th>
<th>Cost per life year gained (LSP s/VAT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panitumumab+FOLFOX vs FOLFOX (PRIME clinical trial)</td>
<td>RAS</td>
<td>5.8m (26.0m vs 20.2m) HR: 0.78; p=0.04</td>
<td>17,094.00 €</td>
<td>35,367 €</td>
</tr>
<tr>
<td>Cetuximab+FOLFIRI vs FOLFIRI (CRYSTAL clinical trial)</td>
<td>RAS</td>
<td>8.2m (28.4m vs 20.2m) HR: 0.69; p=0.0024</td>
<td>18,597.09 €</td>
<td>27,215 €</td>
</tr>
<tr>
<td>Cetuximab+FOLFIRI vs Bevacizumab+FOLFIRI (FIRE-3 clinical trial)</td>
<td>RAS</td>
<td>8.1m (33.1m vs 25.0m) HR: 0.697; p=0.006</td>
<td>3,484.50 €</td>
<td>5,162 €</td>
</tr>
</tbody>
</table>

- Cetuximab leads to statistically and clinically significant OS gains versus the comparators in both CRYSTAL and FIRE-3 studies.
- Erbitux is presented as the most cost-effective therapy, with ICER below the usual 30,000€/LYG threshold in both trials.
- Final results of CALGB-80405 study were not available at the moment of this analysis and thus could not be included in the present evaluation.

### Conclusions

- Cetuximab is the biological therapy that both increases OS and minimizes the cost per LYG in first line treatments for RAS WT patients.
- ICER for Cetuximab is estimated to be below the usual 30,000€/LYG threshold versus the comparators in CRYSTAL and FIRE-3 trials.
- These results are in line with the recent decisions of the National Cancer Drugs Fund in the UK about biological first line therapies in mCRC treatment (NHS, January March and September 2015).

### References

5. ESMO Clinical Practice Guidelines

### Disclosures

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