

## Colorectal cancer detected and undetected in the colorectal cancer screening after a million invitations. The Basque Country programme (Spain)

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### Background

Colorectal cancer (CRC) is a major cause of morbidity and mortality. CRC screening may reduce disease-related mortality by early-stage detection of cancers.

### Aims

To study the effect of immunochemical faecal occult blood test (FIT) screening on reduction in colorectal cancer-related-mortality.

### Methods

The programme has a linkage with different clinical databases and cancer registers to allow suitable evaluation. This evaluation involves the detection of Interval Cancer (ICs) after a negative FIT (IC-FIT), the detection of ICs after a positive FIT and confirmatory diagnosis without CRC detected and before the following recommended colonoscopy (IC-COL) and CRC detected after surveillance colonoscopies (SURV-CRC). We conducted a retrospective observational study, analyzing data CRC from January 2009 to December 2015.

### Results

1,193,602 people were invited and 818,887 participated (68.6%). 92.7% accepted colonoscopy; detecting 18,523 Advanced Adenoma, 2,518 screening CRC, 186 were IC-FIT, 18 IC-COL and 27 IC-SURV. There was statistically significant relation between the location and CRC type; screen-detected are frequent at distal colon (19.8%) than IC-FIT (37.0%), IC-COL (35.3%) and SURV-CRC (37.0%). Stage distribution significantly differed between different CRC: 70.8% of S-CRC diagnosed in stages I-II, and 81.5% of SURV-CRC versus 42.5% and 33.3% of IC-FIT and IC-COL. Survival at 5-year was significantly lower in screening compared to other CRC patients (SURV-CRC 85.6%, IC-FIT 77.8% and IC-COL 63.8%,  $p < 0.001$ ). The risk of mortality in IC-COL was statistically higher than screen-detected CRC (HR: 3.50 [IC95%:1.12-11.00];  $p < 0.001$ ); also in IC-FIT (HR: 3.31 [IC95%:2.26-4.86];  $p = 0.032$ ). We didn't find statistically significant differences for IC-SURV (HR: 1.24 [IC95%:0.31-5.02];  $p = 0.760$ ). The median follow-up time was 3.2 years (Range: 0.09-7.67 years).

### Conclusion

CRC was detected at earlier stages in screen-detected CRC and IC-SURV; this is related to a significantly 5-year survival improvement. These findings indicate the need of population-based studies that continue analyzing related factors to increase efficiency.