

# Factors that explain why complications occur after colonoscopies in population based screening programme

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## Background

The Basque Colorectal Cancer Screening Programme has both high participation rate (68.5%) and high compliance rate of colonoscopy (93.1%) after a positive faecal occult blood test (FIT). Although, CRC screening with biannual FIT has shown to reduce CRC mortality, the ultimate effectiveness of the screening programmes depends on the accuracy of post-FIT colonoscopy, and thus, harms related to colonoscopy complications might not be underestimated.

## Aim

To determine which factors are related to post-FIT colonoscopy complications.

## Methods

Data of invitations from January, 2009 to December, 2014 on clinical characteristics of patients, screening history, endoscopic procedure and histology results were collected. Mortality and complications within 30 days after colonoscopy were identified through national registries and assessed by means of reviewing the medical records. Logistic regression was used to identify predictors of colonoscopy complications.

## Results

Among 39,254 colonoscopies, complication rate was 1.1%. The risk of perforation after a diagnostic colonoscopy, was 2.8/1,000 and the risk of post-polypectomy bleeding was 10/1,000. No deaths were reported.

Independent predictors of colonoscopy complication were sex (OR:2.7 for men; 95%CI:2.1-3.5), history of abdominal surgery (OR: 2.5; 95%CI:1.7-3.6), previous history of cardiopathy (OR:1.6; 95%CI:1.2-2.1), chronicity index (OR:1.6; 95%CI:1.1-2.3), diverticulosis (OR:3.2; 95%CI:2.3-4.5), polyp size  $\geq 20$  mm (OR:2.2; 95%CI:1.5-3.2), polypectomy (OR:5.0; 95%CI:3.5-7.1), pT1 in the diagnosis (OR:2.2; 95%CI:1.1-4.2) and advanced adenoma in the diagnosis (OR:5.6; 95%CI:4.1-7.6). The locations of the major size polyp and of the highest number of polyps were also identified as risk factors. We found no relationship with: age, body mass index, anticoagulant or antiplatelet therapy, adenoma or polyp detection rates or bowel preparation.

## Conclusions

Colonoscopy, with or without lesion removal, is an invasive procedure with a small, but not insignificant risk of major complications. That is why, it is crucial to know which aspects predict their occurrence in order to implement according countermeasures.