

# Study Summary

## Impact of the novel powered circular stapler on risk of anastomotic leakage in colorectal anastomosis: a propensity score-matched study

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### Conclusion

The ECHELON CIRCULAR™ Powered Stapler has the potential clinical advantage of reducing anastomotic leak incidence in left-sided colorectal anastomosis

### Study Aim

To compare the anastomotic leak (AL) rate between the Echelon Circular™ Powered Stapler (ECP) and manual circular staplers (MCS) for left-sided colorectal anastomosis.

### Methods

- Retrospective analysis of a prospectively maintained cohort database of 279 consecutive patients who had a left-sided colorectal anastomosis >5cm from the anal verge with ECP (n=61) or MSC (n=218)
- All procedures (Hartmann's reversal, left colectomy, sigmoidectomy and anterior rectal resection) took place between January 2017 and February 2020 at a single centre in Spain
- Patients were propensity-score matched (ECP [n=60] and MSC [n=119]) and AL within 30 days of surgery was confirmed with computed tomography



Propensity-score matching ensured the groups were balanced for age, sex, BMI, ASA Charlson index, preoperative Hb, pathology and surgical approach



The Clavien-Dindo classification is a discrete scale measuring the severity of complications from Grade I (no treatment) to Grade V (patient death)

### Primary Endpoints:

- Incidence of AL according to the International Study Group of Rectal Cancer definition

### Secondary Endpoint:

- Degree of postoperative morbidity according to Clavien-Dindo classification



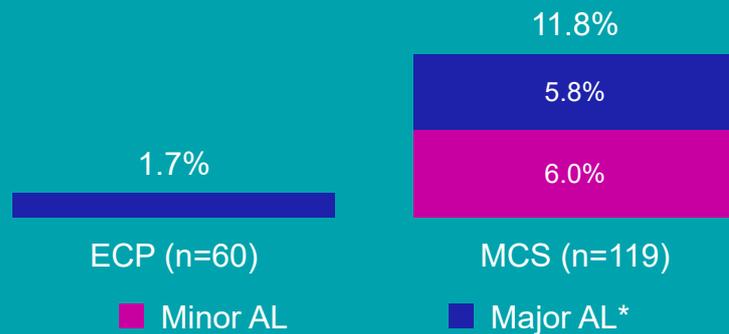
# Results

## Anastomotic Leak

- In the overall cohort including both ECP and MCS groups, 9% (25/279) of patients experienced AL
- Factors significantly associated with AL were the type of circular stapler used ( $p=0.021$ ) and patient ASA score ( $p=0.025$ )
- All other variables included in propensity-score matching, as well as operating time and diagnosis, were not related to AL ( $p \geq 0.05$ ), highlighting the impact of the circular stapler used



Following propensity-score matching, the AL rate was significantly lower for patients treated with ECP compared to MCS ( $p=0.022$ )



\*Requiring reoperation.



There was a trend for a lower risk of AL with ECP (odds ratio [OR] 0.169, 95% CI 0.024–1.166) compared to MCS (OR, 1.258, 95% CI 1.132–1.398)

## Postoperative Morbidity



Following propensity-score matching, there was a trend for lower postoperative morbidity with ECP compared to MCS ( $p=0.054$ ) according to Clavien-Dindo classification, including fewer patients with complications resulting in:

