

ALPRES²MA STUDY

ANASTOMOTIC LEAKAGE PREVENTION BY ENDOVASCULAR STENTING OF THE SUPERIOR MESENTERIC ARTERY

drs. Koen Vree Egberts^{1,2,5}, Prof. dr. Bob Geelkerken^{1,5}, dr. Desiree Leemreis^{2,3}, dr. Ian Faneyete⁴,
drs. Floor Metz^{1,5}, dr. Anneriet Dassen¹, drs. Eric Stassen¹, dr. Michelle Kip⁵, dr. Marjolein Brusse-
Keizer^{1,5}, dr. Kay Pieterman³, prof. dr. Hans de Wit⁶, prof. dr. Marco Bruno³, dr. Eva Deerenberg²
Affiliations: ¹Medisch Spectrum Twente, Enschede, ²Franciscus, Rotterdam, ³Erasmus MC, Rotterdam,
⁴ZGT, Almelo, ⁵Universiteit Twente, Enschede, ⁶Radboud Universitair Medisch Centrum, Nijmegen

Presenting author: Koen Vree Egberts (M3i)

Introduction

Anastomotic leakage (AL) after colorectal surgery is a serious complication that increases morbidity, mortality, and healthcare costs. Theoretically, compromised blood flow caused by mesenteric artery (MA) stenosis may create suboptimal healing conditions at the anastomotic site, increasing susceptibility to AL. Our recent retrospective multicentre case-control study found that $\geq 50\%$ stenosis of the Superior Mesenteric Artery (SMA) increased the odds of AL by six times (OR = 5.91, CI 2.78-12.60, $p < .001$)(1).

Objectives

The aim of the ALPrES²MA study is to evaluate whether preventive endovascular stenting of the SMA in patients with $\geq 50\%$ stenosis reduces AL risk and improves patient outcomes.

Methods

The ALPrES²MA study is a nationwide randomized controlled trial (RCT) in the Netherlands. Patients with $\geq 50\%$ SMA stenosis scheduled for elective colon resection with primary anastomosis will be randomized 1:1 to undergo either preoperative preventive endovascular SMA stenting or no stenting. In the intervention group, patients will receive lifelong antiplatelet therapy post-procedure for stent patency. Intra-operative quantitative fluorescence angiography (Q-FA) using indocyanine green (ICG) will assess anastomotic microcirculation and its relationship with AL risk.

Results

The primary endpoint is the prevalence of AL within 30 days post-surgery. Secondary endpoints include Q-FA measurements, AL severity, vascular calcification scores, perioperative hemodynamic, cost-effectiveness analysis and a business impact analysis.

Conclusion

The presence of $\geq 50\%$ SMA stenosis is associated with a significantly higher risk of AL, and the ALPrES²MA study will investigate whether preventive SMA stenting can reduce this risk and improve outcomes in patients undergoing colorectal resection.

References

1. Harmankaya D, Vree Egberts KJ, Metz FM, Vaassen HGM, Slagboom-van Eeden Petersman S, Brusse-Keizer M, le Haen P, Bruno MJ, Geelkerken BH, van Noord D; Dutch Mesenteric Ischaemia Study Group (DMIS). Mesenteric Artery Stenosis is a Risk Factor for Anastomotic Leakage in Colorectal Surgery. *Eur J Vasc Endovasc Surg*. 2024 Nov 16:S1078-5884(24)00969-9. doi: 10.1016/j.ejvs.2024.11.013. PMID: 39557379.