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## Surgical management strategies for malignancies of the splenic flexure—a systematic review and meta-analysis

David Lennon<sup>1</sup>, John Mahon<sup>2</sup>, Éanna Ryan<sup>1</sup>,  
Odhrán Ryan<sup>1</sup>, Matt Davey<sup>2</sup>, Rory Kennelly<sup>1</sup>,  
Des Winter<sup>1</sup>, Ann Hanly<sup>1</sup>, Sean Martin<sup>1</sup>

<sup>1</sup>Department of Colorectal Surgery, St Vincent's University Hospital, Dublin, Ireland; <sup>2</sup>Department of Surgery, Royal College of Surgeons Ireland, Dublin, Ireland

**Background:** Extended right (ERHC) or left hemicolectomy (LHC) are the traditional management for splenic flexure colorectal cancer (SF-CRC). Formal resections were advocated as the lymphatic drainage is poorly defined. Emerging evidence suggests that segmental splenic flexure colectomy (SFC) may be oncologically adequate. We conducted a network meta-analysis (NMA) to determine the optimal surgical approach to SF-CRC.

**Methods:** A systematic review was conducted from inception to the 30th of May 2022. NMA was performed using RStudio and Netmeta.

**Results:** A total of 13 studies, involving 6,176 patients (ERHC n=785; LHC n=1,527; SFC n=3,864) were included in the NMA. SFC had a shorter operation time [176.37 min, mean difference (MD) SFC *vs.* LHC 20.34 min 95% credible interval (CrI) 10.9, 29.97; SFC *vs.* ERHC 22.19 95% CrI 11.09, 33.29] but also had a lower average lymph node yield (LNY) with ERHC harvesting the most (MD 7.15, 95% CrI 5.71, 8.60). ERHC had higher incidence of post-operative ileus [odds ratio (OR) 3.47, 95% CrI 1.11, 10.84]. There was no difference in overall survival [SFC *vs.* LHC hazard ratio (HR) 1.03, 95% CrI 0.76, 1.34; SFC *vs.* ERHC HR 1.18, 95% CrI 0.85, 1.58]. There was no difference in minimally invasive surgery, anastomotic leak

or perioperative mortality rates, or length-of-stay.

**Conclusions:** SFC, LHC, ERHC are all acceptable for the curative resection of SF-CRC. While ERHC has a higher LNY, there is no difference in OS. SFC may allow for a shorter operation and improved bowel function postoperatively. Surgeon preference and personalizing patient care are the likely determining factors in the management of SF-CRC.

**Keywords:** Colorectal cancer (CRC); splenic flexure cancer; surgical resection; meta-analysis; general surgery

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### Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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