

Curatively Intended Treatment of Colorectal Liver Metastases

Patient, Primary and Metastatic Pattern as Prognostic Factors

Akademisk avhandling

Som för avläggande av medicine doktorexamen vid Sahlgrenska akademien, Göteborgs universitet kommer att offentligas försvaras i Academicum, hörsal Arvid Carlsson, Medicinaregatan 3, fredagen den 22 april 2022, klockan 13.00

av Peter Scherman

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Avhandlingen baseras på följande delarbeten

- I. Scherman P, Syk I, Holmberg E, Naredi P, Rizell M. Influence of primary tumour and patient factors on survival in patients undergoing curative resection and treatment for liver metastases from colorectal cancer. *BJS Open* 2020;4(1):118-132.
- II. Scherman P, Syk I, Holmberg E, Naredi P, Rizell M. Impact of patient, primary tumor and metastatic pattern including tumor location on survival in patients undergoing ablation or resection for colorectal liver metastases: A population-based national cohort study. *Eur J Surg Oncol* 2021;47(2):375-383.
- III. Scherman P, Syk I, Holmberg E, Naredi P, Rizell M. Risk factors for postoperative complications following resection of colorectal liver metastases and the impact on long-term survival: A population-based national cohort study. *Manuscript, submitted*.
- IV. Hansdotter P*, Scherman P*, Petersen SH, Mikalonis M, Holmberg E, Rizell M, Naredi P, Syk I, on behalf of the COLOFOL study group. Patterns and resectability of colorectal cancer recurrences: outcome study within the COLOFOL trial. *BJS Open* 2021;5(4).
*These authors contributed equally to this paper
- V. Scherman P, Hansdotter P, Holmberg E, Sune Petersen, Rizell M, Naredi P, Syk I, on behalf of the COLOFOL study group. High resection rates of colorectal liver metastases after standardized follow-up and multimodal management: an outcome study within the COLOFOL trial. *Manuscript*

**SAHLGRENSKA AKADEMIN
INSTITUTIONEN FÖR KLINISKA VETENSKAPER**



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ABSTRACT

Background: Resection and/or ablation of colorectal liver metastases (CRLM) is increasingly common and long-term results are improving. In this thesis prognosis of CRLM is studied in a wide perspective, with focus on common clinical factors to consider in preoperative decision making.

Study I-III: Data on radically resected colorectal cancer (CRC) was collected from the Swedish Colorectal Cancer Registry (SCRCR) and patients also treated for CRLM were identified in the Swedish Registry for Liver Cancer (Sweliv). A total of 1325 patients were treated for CRLM with a 5-year relative survival (RS) >50%, also for patients ≥ 75 years of age. Complications from the primary tumor resection and primary tumor characteristics had a large impact on long-term survival after treatment of CRLM. Liver metastasis >20 mm, was associated with increased risk. Number of tumors was of less importance when tumor location was considered. Ablation doubled the risk of death within 5 years in a propensity score analysis. Postoperative complications (POC) were registered for 24% of all patients and were associated with inferior 5-year RS and prolonged hospital stay. Laparoscopic technique lowered the risk for POC.

Study IV-V: The study cohort was based on the randomized COLOFOL trial and included patients with recurrent disease after radically resected CRC. All recurrences within 5 years postoperatively were identified and medical files were scrutinized. Out of 2442 patients, 471 developed any kind of local recurrences or metachronous metastases of which 48% were treated with curative intent. Over 90% of the 235 patients with CRLM were assessed in multidisciplinary tumor boards, 123 (52%) were treated with curative intent with subsequent 5-year overall survival (OS) of 58%. High frequency follow-up after primary tumor resection was a positive prognostic factor for patients with CRLM.

Conclusion: Prognosis of CRLM depend on patient, primary tumor, metastatic pattern, and choice of treatment. After multidisciplinary assessment, high resection rates and long-term survival are achievable.

KEYWORDS: Colorectal liver metastases, prognostic factors, primary tumor, metastatic pattern, resection, ablation, postoperative complications, resectability, follow-up

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