Minimally Invasive versus Open Hepatectomy for the Resection of Colorectal Liver Metastases: A Systematic Review and Meta-analysis

Appendix 4: List of excluded studies

Part 1 includes the studies that did not fulfil eligibility criteria on initial full-text review. (n=170)

This includes duplicates that crept into full-text review as well and were removed manually.

Part 2 includes studies that were excluded due to only having mixed data of staged and simultaneous. (n=14)

These studies were excluded due to providing combined/mixed data for KQ1 and KQ2

While their meta-analysis was undertaken, it was not included in the final results due to significant heteregeneity

The results of mixed data have been provided in another supplementary appendix.

Part 3 includes studies that were excluded after full-text extraction due to overlapping patient data with other studies. (n=4)

Part 1: Studies that did not fulfill eligibility criteria on initial full text review

Title	Authors	Published Year	Journal	Volume	Issue	Pages
Safety and efficacy evaluation of laparoscopy in colorectal cancer with liver metastasis	Ye, M. F.; Xu, G. G.; Gu, J. F.; Zhou, Q. L.; Lin, F. Q.; Tao, K. L.; Tao, F.	2017	Eur Rev Med Pharmacol Sci	21	3 Suppl	27-32
Outcomes of robotic liver resections for colorectal liver metastases. A multi-institutional analysis of minimally invasive ultrasound-guided robotic surgery	Guerra, F.; Guadagni, S.; Pesi, B.; Furbetta, N.; Di Franco, G.; Palmeri, M.; Annecchiarico, M.; Eugeni, E.; Coratti, A.; Patriti, A.; Morelli, L.	2019	Surg Oncol	28		14-18
Laparoscopic versus open parenchymal preserving liver resections in the posterosuperior segments: a case-matched study	D'Hondt, M.; Tamby, E.; Boscart, I.; Turcotte, S.; Parmentier, I.; Pottel, H.; Lapointe, R.; Ovaere, S.; Vansteenkiste, F.; Vandenbroucke-Menu, F.	2018	Surg Endosc	32	3	1478-1485

Inflammatory Response After Laparoscopic Versus Open Resection of Colorectal Liver Metastases: Data From the Oslo-CoMet Trial	Fretland, A. A.; Sokolov, A.; Postriganova, N.; Kazaryan, A. M.; Pischke, S. E.; Nilsson, P. H.; Rognes, I. N.; Bjornbeth, B. A.; Fagerland, M. W.; Mollnes, T. E.; Edwin, B.	2015	Medicine (Baltimore)	94	42	e1786
Quality of life from a randomized trial of laparoscopic or open liver resection for colorectal liver metastases	Fretland, Ã…A; Dagenborg, V. J.; Waaler BjÃ¸rnelv, G. M.; Aghayan, D. L.; Kazaryan, A. M.; Barkhatov, L.; Kristiansen, R.; Fagerland, M. W.; Edwin, B.; Andersen, M. H.	2019	British journal of surgery	106	10	1372â€‰1380
SIMULTANEOUS SURGICAL TREATMENT OF PATIENTS WITH COLORECTAL CANCER AND LIVER METASTASIS	Grytsenko, S.	2020	Georgian Med News		301	50-53
Outcomes of laparoscopic hepatectomy as compared to open resection for colorectal liver metastases	Hand, F.; Toale, C.; Lahani, R.; Cassidy, S.; Waters, P. S.; McEntee, G.; Conneely, J. C.	2018	Irish Journal of Medical Science	187		S170-S171

Synchronous rectal and hepatic resection of rectal metastatic disease	Boostrom, S. Y.; Vassiliki, L. T.; Nagorney, D. M.; Wolff, B. G.; Chua, H. K.; Harmsen, S.; Larson, D. W.	2011	J Gastrointest Surg	15	9	1583-8
Current status of laparoscopic liver resection for the management of colorectal liver metastases	Kabir, T.; Syn, N.; Goh, B. K. P.	2020	J Gastrointest Oncol	11	3	526-539
Microscopic resection margins adversely influence survival rates after surgery for colorectal liver metastases: An open ambidirectional Cohort Study	Lee, K. S.; Suchett-Kaye, I.; Abbadi, R.; Finch-Jones, M.; Pope, I.; Strickland, A.; Rees, J.	2020	Int J Surg	83		14-Aug
Simultaneous versus staged resection for synchronous colorectal liver metastases: A population-based cost analysis in Ontario, Canada - Health economic evaluation	Wang, J.; Griffiths, C.; Simunovic, M.; Parpia, S.; Gu, C. S.; Gafni, A.; Ruo, L.; Hallet, J.; Bogach, J.; Serrano, P. E.	2020	Int J Surg	78		75-82

Implementation of a Hepatic Artery Infusion Program: Initial Patient Selection and Perioperative Outcomes of Concurrent Hepatic Artery Infusion and Systemic Chemotherapy for Colorectal Liver Metastases	Creasy, J. M.; Napier, K. J.; Reed, S. A.; Zani, S., Jr.; Wong, T. Z.; Kim, C. Y.; Wildman-Tobriner, B.; Strickler, J. H.; Hsu, S. D.; Uronis, H. E.; Allen, P. J.; Lidsky, M. E.	2020	Ann Surg Oncol			
Use of primary surgical drains in synchronous resection for colorectal liver metastases: a NSQIP analysis of current practice paradigm	Yee, E. J.; Al-Temimi, M. H.; Flick, K. F.; Kilbane, E. M.; Nguyen, T. K.; Zyromski, N. J.; Schmidt, C. M.; Nakeeb, A.; House, M. G.; Ceppa, E. P.	2020	Surg Endosc			
Usefulness of the laparoscopic liver resection for colorectal liver metastases	Kodai, S.; Kanazawa, A.; Nozawa, A.; Murata, A.; Shimizu, S.; Deguchi, S.; Tashima, T.; Tauchi, J.; Miura, K.; Urata, Y.	2017	J Hepatobiliary Pancreat Sci	24		A284
Impact of laparoscopic simultaneous hepatectomoy in treatment of colorectal cancer with	Ishizawa, T.; Kawakatsu, S.; Fujimoto, Y.; Sato, T.; Ono, Y.; Mise, Y.; Inoue, Y.; Ito, H.; Takahashi,	2019	Surg Endosc	33		S391

synchronous liver metastasis	Y.; Ueno, M.; Saiura, A.					
The impact of laparoscopic versus open colorectal cancer surgery on subsequent laparoscopic resection of liver metastases: A multicenter study	Di Fabio, F.; Barkhatov, L.; Bonadio, I.; Dimovska, E.; Fretland Ã…, A.; Pearce, N. W.; Troisi, R. I.; Edwin, B.; Abu Hilal, M.	2015	Surgery	157	6	1046-54
Robotic liver surgery for minor hepatic resections: a comparison with laparoscopic and open standard procedures	Croner, R. S.; Perrakis, A.; Hohenberger, W.; Brunner, M.	2016	Langenbecks Arch Surg	401	5	707-14
Laparoscopic Versus Open Major Hepatectomy: Analysis of Clinical Outcomes and Cost Effectiveness in a High-Volume Center	Cipriani, F.; Ratti, F.; Cardella, A.; Catena, M.; Paganelli, M.; Aldrighetti, L.	2019	J Gastrointest Surg	23	11	2163-2173
Minimally invasive resection of colorectal cancer liver	Golas, B. J.; Li, S.; Reddy, S. K.; Steel, J.; Mejia, J. C.; Pingpank, J. F.;	2013	HPB	15		26

metastases shortens the interval to initiation of adjuvant systemic chemotherapy: A case-control study	Marsh, J. W.; Bartlett, D. L.; Geller, D. A.; Tsung, A.					
Peri-operative outcomes following liver resection-one year experience of a tertiary referral centre	Keane, K.; Casey, L.; Kearney, D.; Conneely, J.; McEntee, G.	2017	Irish Journal of Medical Science	186	8	S341
Laparoscopic hepatectomy significantly shortens the time to postoperative chemotherapy in patients undergoing major hepatectomies	Mbah, N.; Agle, S. C.; Philips, P.; Egger, M. E.; Scoggins, C. R.; McMasters, K. M.; Martin, R. C. G.	2017	Am J Surg	213	6	1060-1064
Parenchymal-Sparing Liver Resections (Open And Laparoscopic) In Metastatic Colorectal Cancer	Kvasivka, O.	2020	International Journal of Surgery	75		S13
Laparoscopic liver resection for colorectal liver metastases: outcomes of an initial experience	Hand, F.; Toale, C.; Lahani, R.; Cassidy, S.; McEntee, G.; Conneely, J.	2018	HPB	20		S364

compared to open resection						
Comparable oncologic outcomes after minimally invasive hepatectomy compared to open approach: 10-year review of recurrences and survival of CRCLM patients	Jajja, M. R.; Maxwell, D. W.; Meltzer, R. S.; Hashmi, S. S.; Kooby, D. A.; Maithel, S. K.; Sarmiento, J. M.	2019	HPB	21		S11-S12
Intention to treat Laparoscopic versus Open Hemi-hepatectomy: A paired Case-matched Comparison Study	Clark, J.; Mavroeidis, V. K.; Lemmon, B.; Briggs, C.; Bowles, M. J.; Stell, D. A.; Aroori, S.	2019	Scand J Surg			1.46E+15
Short-term outcomes of open liver resection and laparoscopic liver resection: Secondary analysis of data from a multicenter prospective study (CSGO-HBP-004)	Kobayashi, S.; Fukui, K.; Takeda, Y.; Nakahira, S.; Tsujie, M.; Shimizu, J.; Miyamoto, A.; Eguchi, H.; Nagano, H.; Doki, Y.; Mori, M.	2018	Ann Gastroenterol Surg	2	1	87-94

Laparoscopic simultaneous resection of colorectal primary tumor and liver metastases: a propensity score matching analysis	Dagher, I.; Tranchart, H.; Fuks, D.; Vigano, L.; Ferretti, S.; Gaillard, M.; Chirica, M.; Paye, F.; Wakabayashi, G.; Gayet, B.	2016	Surgical endoscopy and other interventional techniques.	30		S38
Short-Term Outcomes after Simultaneous Colorectal and Major Hepatic Resection for Synchronous Colorectal Liver Metastases	Ono, Y.; Saiura, A.; Arita, J.; Takahashi, Y.; Takahashi, M.; Inoue, Y.	2017	Dig Surg	34	6	447-454
Long-term survival after laparoscopic versus open resection for colorectal liver metastases	Fretland, A. A.; Aghayan, D.; Edwin, B.	2019	Journal of clinical oncology	37		
Short and long-term outcomes of laparoscopic compared to open liver resection for colorectal liver metastases	Hallet, J.; Beyfuss, K.; Memeo, R.; Karanicolas, P. J.; Marescaux, J.; Pessaux, P.	2016	Hepatobiliary Surg Nutr	5	4	300-10
Short-term outcomes minimally invasive versus open hepatectomy for colorectal cancer liver metastases: Comparative	Kazakov, I. V.; Alikhanov, R. B.; Kazakov, I. V.; Tsvirkun, V. V.; Vankovich, A. N.; Akhaldze, D. G.; Kim, P. P.; Grendal, K. D.	2018	Surg Endosc	32		S465

study with propensity score matching						
Comparison of minimally invasive and open colorectal resections for patients undergoing simultaneous R0 resection for liver metastases: a propensity score analysis	Lin, Q.; Ye, Q.; Zhu, D.; Wei, Y.; Ren, L.; Zheng, P.; Xu, P.; Ye, L.; Lv, M.; Fan, J.; Xu, J.	2015	Int J Colorectal Dis	30	3	385-95
Major hepatectomy in patients with synchronous colorectal liver metastases: whether or not a contraindicatio n to simultaneous colorectal and liver resection?	Jovine, E.; Biolchini, F.; Talarico, F.; Lerro, F. M.; Mastrangelo, L.; Selleri, S.; Landolfo, G.; Martuzzi, F.; Iusco, D. R.; Lazzari, A.	2007	Colorectal Dis	9	3	245-52
Combined Proctectomy and Hepatectomy for Metastatic Rectal Cancer Should be Undertaken with Caution: Results of a National Cohort Study	Concors, S. J.; Vining, C. M.; Saur, N. M.; Roses, R. E.; Paulson, E. C.	2019	Ann Surg Oncol	26	12	3972-3979

Impact of the laparoscopic approach for colorectal liver metastases on short- and long-term outcomes. A propensity score analysis	Cipriani, F.; Rawashdeh, M.; Stanton, L.; Armstrong, T.; Takhar, A.; Pearce, N. W.; Primrose, J. N.; Hilal, M. A.; Barbaro, S.	2017	Surgical endoscopy and other interventional techniques	31	2	S444
Pure laparoscopic versus open hemihepatectomy: a critical assessment and realistic expectations â€“ a propensity score-based analysis of right and left hemihepatectomies from nine European tertiary referral centers	Cipriani, F.; Alzoubi, M.; Fuks, D.; Ratti, F.; Kawai, T.; Berardi, G.; Barkhatov, L.; Lainas, P.; Van der Poel, M.; Faoury, M.; Besselink, M. G.; Dâ€™Hondt, M.; Dagher, I.; Edwin, B.; Troisi, R. I.; Scatton, O.; Gayet, B.; Aldrighetti, L.; Abu Hilal, M.	2020	J Hepatobiliary Pancreat Sci	27	1	15-Mar
Laparoscopic versus open liver resection for colorectal liver metastases: a systematic review	Cheng, Y.; Zhang, L.; Li, H.; Wang, L.; Huang, Y.; Wu, L.; Zhang, Y.	2017	J Surg Res	220		234-246

Simultaneous Versus Delayed Resection for Initially Resectable Synchronous Colorectal Cancer Liver Metastases: A Prospective, Open-label, Randomized, Controlled Trial	Boudjema, K.; Locher, C.; Sabbagh, C.; Ortega-Deballon, P.; Heyd, B.; Bachellier, P.; MÃ©tairie, S.; Paye, F.; Bourlier, P.; Adam, R.; Merdrignac, A.; Tual, C.; Le Pabic, E.; Sulpice, L.; Meunier, B.; Regimbeau, J. M.; Bellissant, E.	2020	Ann Surg			
What is the Optimal Timing for Liver Surgery of Resectable Synchronous Liver Metastases from Colorectal Cancer?	Inoue, Y.; Imai, Y.; Osumi, W.; Shimizu, T.; Asakuma, M.; Hirokawa, F.; Hayashi, M.; Uchiyama, K.	2017	Am Surg	83	1	45-53
Disease-Free Survival after Simultaneous or Delayed Resection of Synchronous Colorectal Liver Metastasis and Primary Cancer	Bigourdan, J. M.; Faber, B.; Rayar, M.; Chirpaz, E.; Boucher, E.; Boudjema, K.	2014	Hepatogastroenterology	61	132	1074-81
Laparoscopic liver resection for metastasic colorectal liver metastases. Experience in	Maurette, R. J.; Garcica Ejarque, M. D.; Gonzalez, R. R.; Bregante, M.;	2016	HPB	18		e194

one center in Argentina	Bogetti, D. J.; Pirchi, D. E.					
Open versus laparoscopic liver resection for colorectal liver metastases (the Oslo-CoMet Study): study protocol for a randomized controlled trial	Fretland Ã…, A.; Kazaryan, A. M.; BjÃ¸rnbeth, B. A.; Flatmark, K.; Andersen, M. H.; TÃ¸nnessen, T. I.; BjÃ¸rnelv, G. M.; Fagerland, M. W.; Kristiansen, R.; Ã˜yri, K.; Edwin, B.	2015	Trials	16		73
Laparoscopic hepatectomy for liver metastases from colorectal cancer: a meta-analysis	Luo, L. X.; Yu, Z. Y.; Bai, Y. N.	2014	J Laparoendosc Adv Surg Tech A	24	4	213-22
A systematic review and meta-analysis comparing the short- and long-term outcomes for laparoscopic and open liver resections for liver metastases from colorectal cancer	Ciria, R.; OcaÃ±a, S.; Gomez-Luque, I.; Cipriani, F.; Halls, M.; Fretland Ã…, A.; Okuda, Y.; Aroori, S.; BriceÃ±o, J.; Aldrighetti, L.; Edwin, B.; Hilal, M. A.	2020	Surg Endosc	34	1	349-360

The OSLO-COMET Randomized Controlled Trial of Laparoscopic Versus Open Resection for Colorectal Liver Metastases	Chan, A. K. C.; Jamdar, S.; Sheen, A. J.; Siriwardena, A. K.	2018	Ann Surg	268	6	e69
Postero-superior liver segments resection for colorectal liver metastases. PSM based comparative analysis of minimally invasive and open resections	Efanov, M.; Granov, D.; Alikhanov, R.; Rutkin, I.; Kazakov, I.; Vankovich, A.; Koroleva, A.; Zamanov, E.; Kulikova, N.; Elyzarova, N.	2019	HPB	21		S299-S300
Simultaneous and staged resections in patients with synchronous colorectal liver metastases	Kolesnik, O.; Lukashenko, A.; Chorna, N.; Ostapenko, Y.	2017	Annals of oncology	28		iii123
Simultaneous Minimally Invasive Treatment of Colorectal Neoplasm with Synchronous Liver Metastasis	Garritano, S.; Selvaggi, F.; Spampinato, M. G.	2016	Biomed Res Int	2016		9328250
Role and benefit of laparoscopic colorectal resection with open liver resection	Lee, J.; Choi, K.; Han, Y.; Cho, M.; Hur, H.; Min, B.; Kim, N.; Lee, K.	2019	Dis Colon Rectum	62	6	e213

(hybrid) in treatment of colorectal cancer with synchronous liver metastases						
Oncologic results of laparoscopic liver resection for malignant liver tumors	Akyuz, M.; Yazici, P.; Yigitbas, H.; Dural, C.; Okoh, A.; Aliyev, S.; Aucejo, F.; Quintini, C.; Fung, J.; Berber, E.	2016	J Surg Oncol	113	2	127-9
Comparative Analysis between Simultaneous Resection and Staged Resection for Synchronous Colorectal Liver Metastases - A Single Center Experience on 300 Consecutive Patients	Alexandrescu, S.; Diaconescu, A.; Ionel, Z.; Zlate, C.; Grigorie, R.; HrehoreÅ£, D.; BraÅŸoveanu, V.; Dima, S.; Botea, F.; Ionescu, M.; Tomescu, D.; Droc, G.; Fota, R.; Croitoru, A.; Gramaticu, I.; Buica, F.; Iacob, R.; Gheorghe, C.; Herlea, V.; Grasu, M.; Dumitru, R.; BoroÅŸ, M.; Popescu, I.	2017	Chirurgia (Bucur)	112	3	278-288

Simultaneous resection of the primary colorectal tumor and liver metastases--a safe and effective operation	Alexandrescu, S.; HrehoreÅ£, D.; Ionel, Z.; Croitoru, A.; Anghel, R.; Popescu, I.	2012	Chirurgia (Bucur)	107	3	298-307
Minimal-invasive versus open hepatectomy for colorectal liver metastases: Bicentric analysis of postoperative outcomes and long-term survival using propensity score matching analysis	Andreou, A.; Kradolfer, D.; Knitter, S.; Schmelzle, M.; Candinas, D.; Pratschke, J.; Beldi, G.	2019	Swiss Medical Weekly	149		9S
Minimally invasive liver surgery for metastases from colorectal cancer: oncologic outcome and prognostic factors	Topal, B.; Tiek, J.; Fieuws, S.; Aerts, R.; Van Cutsem, E.; Roskams, T.; Prenen, H.	2012	Surg Endosc	26	8	2288-98
Comparison study between open and laparoscopic liver resection in a saudi tertiary center	Al-Saif, F. A.; Aldekhayel, M. K.; Al-Alem, F.; Hassanain, M. M.; Mattar, R. E.; Alsharabi, A.	2019	Saudi Medical Journal	40	5	452-457

Simultaneous Resection for Synchronous Colorectal Liver Metastasis: the New Standard of Care?	Abelson, J. S.; Michelassi, F.; Sun, T.; Mao, J.; Milsom, J.; Samstein, B.; Sedrakyan, A.; Yeo, H. L.	2017	J Gastrointest Surg	21	6	975-982
Open versus laparoscopic liver resection for colorectal metastases located in the posterosuperior segments	Aghayan, D. L.; Fretland Ã…, A.; Kazaryan, A. M.; BjÃ¸rnbeth, B. A.; Edwin, B.	2019	HPB	21		S974
Optimizing clinical and economic outcomes of surgical therapy for patients with colorectal cancer and synchronous liver metastases	Abbott, D. E.; Cantor, S. B.; Hu, C. Y.; Aloia, T. A.; You, Y. N.; Nguyen, S.; Chang, G. J.	2012	J Am Coll Surg	215	2	262-70
Trends and Outcomes of Synchronous Resection of Colorectal Metastasis in the Modern Era-Analysis of Targeted Hepatic NSQIP Database	Jones, T. J.; Murphy, A. E.; Tameron, A.; Hussain, L. R.; Grannan, K.; Guend, H.; Dunki-Jacobs, E. M.; Lee, D. Y.	2019	J Surg Res	238		35-40
The liver-first approach to the management of colorectal cancer with synchronous hepatic	Jegatheeswaran, S.; Mason, J. M.; Hancock, H. C.; Siriwardena, A. K.	2013	JAMA Surg	148	4	385-91

metastases: a systematic review						
Synchronous primary colorectal and liver metastasis: impact of operative approach on clinical outcomes and hospital charges	Ejaz, A.; Semenov, E.; Spolverato, G.; Kim, Y.; Tanner, D.; Hundt, J.; Pawlik, T. M.	2014	HPB (Oxford)	16	12	1117-26
Simultaneous resection for colorectal cancer with synchronous liver metastases is a safe procedure: Outcomes at a single center in Turkey	Dulundu, E.; Attaallah, W.; Tilki, M.; Yegen, C.; Coskun, S.; Coskun, M.; Erdim, A.; Tanrikulu, E.; Yardimci, S.; Gunal, O.	2017	Biosci Trends	11	2	235-242
Simultaneous colorectal and hepatic procedures for colorectal cancer result in increased morbidity but equivalent mortality compared with colorectal or hepatic procedures alone: outcomes from	Hamed, O. H.; Bhayani, N. H.; Ortenzi, G.; Kaifi, J. T.; Kimchi, E. T.; Staveley-O'Carroll, K. F.; Gusani, N. J.	2013	HPB (Oxford)	15	9	695-702

the National Surgical Quality Improvement Program						
Outcomes of laparoscopic liver resection for lesions located in the right side of the liver	Cho, J. Y.; Han, H. S.; Yoon, Y. S.; Shin, S. H.	2009	Arch Surg	144	1	25-9
Resection of synchronous liver metastases from colorectal cancer	Fujita, S.; Akasu, T.; Moriya, Y.	2000	Jpn J Clin Oncol	30	1	11-Jul
Short-term Outcomes of Laparoscopic versus Open Formal Anatomical Hepatectomy: A Case Matched Control Study	Lau, B.; Franken, C.; Lee, D.; Putchakayla, K.; DiFronzo, L. A.	2015	Am Surg	81	10	1097-100
Outcomes of Simultaneous and Staged Resection for Synchronous Colorectal Liver Metastases (CLM)	Liu, Y.; Chen, H. L. R.; Radhakrishnan, R.; Sumarli, S.; Teo, J. Y.	2018	HPB	20		S417-S418

Laparoscopic versus open repeat liver resection for colorectal liver metastases: a multicenter propensity score matched study	van der Poel, M. J.; Dagher, I.; D'Hondt, M.; Rotellar, F.; Besselink, M. G.; Aldrighetti, L.; Troisi, R.; Gayet, B.; Edwin, B.; Abu Hilal, M.	2018	HPB	20		S360
Laparoscopic versus open two-stage hepatectomy for bilobar colorectal liver metastases: a multi-institutional study with propensity score matching analysis	Okumura, S.; Fuks, D.; Goumard, C.; Kawai, T.; Danion, J.; Soubrane, O.; Gayet, B.; Scatton, O.	2018	HPB	20		S349
Robotic versus laparoscopic combined resection for rectal cancer and liver metastases	Li, J.; Gao, Y.; Liang, W.; Zhang, K.; Cui, J.; Qiao, Z.; Wei, B.; Xi, H.; Chen, L.	2019	Surg Endosc	33		S282
Risk factor stratification after simultaneous liver and colorectal resection for synchronous colorectal metastasis	Lee, W. S.; Kim, M. J.; Yun, S. H.; Chun, H. K.; Lee, W. Y.; Kim, S. J.; Choi, S. H.; Heo, J. S.; Joh, J. W.; Kim, Y. I.	2008	Langenbecks Arch Surg	393	1	13-9

Population level outcomes and costs of single stage colon and liver resection versus conventional two-stage approach for the resection of metastatic colorectal cancer	Idrees, J. J.; Bagante, F.; Gani, F.; Rosinski, B. F.; Chen, Q.; Merath, K.; Dillhoff, M.; Cloyd, J.; Pawlik, T. M.	2019	HPB (Oxford)	21	4	456-464
Robotic simultaneous resection of colorectal cancer iwth synchronous liver metastasis	Han, M.; Han, Y.; Cho, M.; Hur, H.; Min, B.; Lee, K.; Kim, N.	2018	Dis Colon Rectum	61	5	e272
Open liver resection for colorectal metastases induced a significant increase in interleukin-6 as compared to laparoscopic technique	Fretland, A. A.; Sokolov, A.; Postriganova, N.; Kazaryan, A. M.; RÃ¸sok, B. I.; BjÃ¸rnbeth, B. A.; Mollnes, T. E.; Edwin, B.	2014	HPB	16		250-251
Open versus laparoscopic liver resection of colorectal metastases: The OSLO-CoMET study	Fretland Ã…, A.; Kazaryan, A. M.; BjÃ¸rnbeth, B. A.; RÃ¸sok, B.; Flatmark, K.; Andersen, M. H.; BjÃ¸rnelv, G. M. W.; Fagerland, M. W.; Mollnes, T. E.;	2016	HPB	18		e59-e60

	Kristiansen, R.; Edwin, B.					
Minimally Invasive versus open hepatectomy for colorectal cancer liver metastases: comparative analysis of short-term results and survival with propensity score matching	Efanov, M.; Alikhanov, R.; Tsvirkun, V.; Kazakov, I.; Vankovich, A.; Kim, P.; Grendal, K.; Zamanov, E.	2018	HPB	20		S363
Simultaneous colorectal and hepatic resections for colorectal cancer: postoperative and longterm outcomes	de SantibaÃ±es, E.; Lassalle, F. B.; McCormack, L.; Pekolj, J.; Quintana, G. O.; Vaccaro, C.; Benati, M.	2002	J Am Coll Surg	195	2	196-202
Initial experience with laparoscopic hepatic resection at a comprehensive cancer center	Gumbs, A. A.; Tsai, T. J.; Hoffman, J. P.	2012	Surg Endosc	26	2	480-487
Impact of resection for primary colorectal cancer on outcomes in patients with	Huh, J. W.; Cho, C. K.; Kim, H. R.; Kim, Y. J.	2010	J Gastrointest Surg	14	8	1258-64

synchronous colorectal liver metastases						
Effect of treatment sequence on survival in stage IV rectal cancer with synchronous and potentially resectable liver metastases	Ghiasloo, M.; Kahya, H.; Van Langenhove, S.; Grammens, J.; Vierstraete, M.; Berardi, G.; Troisi, R. I.; Ceelen, W.	2019	J Surg Oncol	120	3	415-422
Early Outcome of Liver Resections in Octogenarians	Bhandari, R. S.; Riddiough, G.; Muralidharan, V.; Christophi, C.	2015	Kathmandu Univ Med J (KUMJ)	13	49	19-23
Differences in clinical features between laparoscopy and open resection for primary tumor in patients with stage IV colorectal cancer	Kim, I. Y.; Kim, B. R.; Kim, H. S.; Kim, Y. W.	2015	OncoTargets and Therapy	8		3441-3448
Considering the cost of a simultaneous versus staged approach to resection of colorectal cancer with synchronous liver metastases in a publicly funded	Le Souder, E. B.; Azin, A.; Hirpara, D. H.; Walker, R.; Cleary, S.; Quereshy, F.	2018	J Surg Oncol	117	7	1376-1385

healthcare model						
Comparison between open and minimally invasive resection of liver metastatic colon	Rosales, A.; Asbun, H.; Burns, J.; Croome, K.; Mody, K.; Kasi, P.; Nguyen, J.; Stauffer, J. A.	2019	HPB	21		S146-S147
Benefits of simultaneous totally laparoscopic colorectal surgery and liver resection for colorectal cancer with synchronous liver metastases	Taesombat, W.; Nonthasoot, B.; Vorasittha, A.; Sutherasan, M.; Nivatvongs, S.; Sirichindakul, B.	2018	Surgical endoscopy and other interventional techniques	32	1	S277
Benefit of laparoscopy for rectal resection in patients operated simultaneously for synchronous liver metastases: preliminary experience	Bretagnol, F.; Hatwell, C.; Farges, O.; Alves, A.; Belghiti, J.; Panis, Y.	2008	Surgery	144	3	436-41
A propensity score analysis of surgical outcomes between laparoscopic versus open	Lapisatepun, W.; Junrungsee, S.; Chotirosniramit, A.; Sundhu, T.;	2019	HPB	21		S296

liver resection : an initial experience from single center	Lapisatepun, W.; Ko-iam, W.; Tantraworasin, A.					
Short-term outcomes after combined colon and liver resection for synchronous colon cancer liver metastases: a population study	Abbott, A. M.; Parsons, H. M.; Tuttle, T. M.; Jensen, E. H.	2013	Ann Surg Oncol	20	1	139-47
Robot-assisted procedure versus open surgery for simultaneous resection of colorectal cancer with liver metastases: short-term outcomes of a randomized controlled study	Xu, J.; Wei, Y.; Chang, W.; Jian, M.; Ye, Q.; Wang, X.; Ren, L.; Zhong, Y.; Qin, X.; Fan, J.	2017	Annals of oncology	28		x42â€
Laparoscopic vs open hepatectomy for reccurent liver metastasis from colorectal cancer: A retropective study	Yamada, K.; Murakami, M.; Aoki, T.; Shibata, H.; Wada, Y.; Matsuda, K.; Koizumi, T.; Goto, S.; Fujimori, A.; Watanabe, M.; Otsuka, K.	2017	J Hepatobiliary Pancreat Sci	24		A243

Open liver resection for colorectal metastases: better short- and long-term outcomes in patients potentially suitable for laparoscopic liver resection	Welsh, F. K.; Tekkis, P. P.; John, T. G.; Rees, M.	2010	HPB (Oxford)	12	3	188-94
A 20-year single center experience in the surgical treatment of colorectal liver metastasis	Tsalis, K.; Ioannidis, O.; Cheva, A.; Antigoni Savvala, N.; Antoniou, N.; Parpoudi, S.; Kyziridis, D.; Tatsis, D.; Konstantaras, D.; Kitsikosta, L.; George Pramateftakis, M.; Kotidis, E.; Avgerinos, A.; Mantzoros, I.	2018	J buon	23	6	1640-1647
Outcomes of simultaneous liver resection and right colectomy for metastatic right colon cancer in the US population	Orloff, M. I.; Lu, J.; Kolakowski, S.; Vyas, D.; Dayama, A.	2019	Dis Colon Rectum	62	6	e371
Selection for surgery and survival of synchronous colorectal liver metastases; a	NorÃ©n, A.; Eriksson, H. G.; Olsson, L. I.	2016	Eur J Cancer	53		105-14

nationwide study						
Simultaneous resection of primary colorectal cancer and synchronous liver metastases: a population-based study	Nanji, S.; Mackillop, W. J.; Wei, X.; Booth, C. M.	2017	Can J Surg	60	2	122-128
Efficacy of the predicted operation time (POT) strategy for synchronous colorectal liver metastasis (SCLM): feasibility study for staged resection in patients with a long POT	Nakajima, K.; Takahashi, S.; Saito, N.; Sugito, M.; Konishi, M.; Kinoshita, T.; Gotohda, N.; Kato, Y.	2013	J Gastrointest Surg	17	4	688-95
Predictive factors for anastomotic leakage after simultaneous resection of synchronous colorectal liver metastasis	Nakajima, K.; Takahashi, S.; Saito, N.; Kotaka, M.; Konishi, M.; Gotohda, N.; Kato, Y.; Kinoshita, T.	2012	J Gastrointest Surg	16	4	821-7
Evidence for a synchronous operative approach in the treatment of colorectal	Moug, S. J.; Smith, D.; Leen, E.; Roxburgh, C.; Horgan, P. G.	2010	European journal of surgical oncology	36	4	365-370

cancer with hepatic metastases: A case matched study						
Hepatic resection for colorectal metastases in the caudate lobe of the liver	Morise, Z.; Yamafuji, K.; Takahashi, T.; Asami, A.; Takeshima, K.; Hayashi, N.; Baba, H.; Endo, T.; Tokura, Y.	2004	J Hepatobiliary Pancreat Surg	11	5	348-351
'Liver first' approach in the treatment of colorectal cancer with synchronous liver metastases	Mentha, G.; Roth, A. D.; Terraz, S.; Giostra, E.; Gervaz, P.; Andres, A.; Morel, P.; Rubbia-Brandt, L.; Majno, P. E.	2008	Dig Surg	25	6	430-5
Selection criteria for combined resection of synchronous colorectal cancer hepatic metastases: a cautionary note	McKenzie, S. P.; Vargas, H. D.; Evers, B. M.; Davenport, D. L.	2014	Int J Colorectal Dis	29	6	729-35
Laparoscopic versus open liver resections for colorectal cancer liver metastases: short term results	Å ubrt, Z.; Ferko, A.; VoÅ¡mik, M.; Linter-KapiÅ¡inskÃ¡, M.; Oliverius, M.; GÃ¼rlich, R.	2019	Rozhl Chir	98	11	434-440

Laparoscopic resection results for treatment of colorectal cancer liver metastases: A case match study with propensity score	Regimbeau, J. M.; Le Roux, F.; Khaoudy, I.	2016	HPB	18		e78-e79
Posthepatectomy liver failure after simultaneous versus staged resection of colorectal cancer and synchronous hepatic metastases	Patrono, D.; Paraluppi, G.; Perino, M.; Palisi, M.; Migliaretti, G.; Berchialla, P.; Romagnoli, R.; Salizzoni, M.	2014	G Chir	35	4-Mar	86-93
Laparoscopic and robot-assisted one-stage resection of colorectal cancer with synchronous liver metastases: a pilot study	Patriti, A.; Ceccarelli, G.; Bartoli, A.; Spaziani, A.; Lapalorcia, L. M.; Casciola, L.	2009	J Hepatobiliary Pancreat Surg	16	4	450-7
Simultaneous liver and colorectal resections are safe for synchronous colorectal liver metastasis	Martin, R.; Paty, P.; Fong, Y.; Grace, A.; Cohen, A.; DeMatteo, R.; Jarnagin, W.; Blumgart, L.	2003	J Am Coll Surg	197	2	233-41; discussion 241-2

Simultaneous Versus Staged Resection for Synchronous Colorectal Cancer Liver Metastases	Martin, Ii R. C. G.; Augenstein, V.; Reuter, N. P.; Scoggins, C. R.; McMasters, K. M.	2009	J Am Coll Surg	208	5	842-850
Patients with multiple synchronous colonic cancer hepatic metastases benefit from enrolment in a "liver first" approach protocol	Kardassis, D.; Ntinas, A.; Miliaras, D.; Kofokotsios, A.; Papazisis, K.; Vrochides, D.	2014	World J Hepatol	6	7	513-9
Simultaneous laparoscopic resection of colorectal cancer and synchronous metastatic liver tumor	Hayashi, M.; Komeda, K.; Inoue, Y.; Shimizu, T.; Asakuma, M.; Hirokawa, F.; Okuda, J.; Tanaka, K.; Kondo, K.; Tanigawa, N.	2011	Int Surg	96	1	74-81
Laparoscopic resection of colorectal cancer facilitates simultaneous surgery of synchronous liver metastases	Hatwell, C.; Bretagnol, F.; Farges, O.; Belghiti, J.; Panis, Y.	2013	Colorectal Dis	15	1	e21-8
Laparoscopic versus open liver resection for metastatic colorectal	Shin, J. K.; Kim, H. C.; Lee, W. Y.; Yun, S. H.; Cho, Y. B.;	2016	Colorectal Disease	18		103

cancer: A comparative study	Huh, J. W.; Park, Y. A.					
Laparoscopy could be the best approach to treat colorectal cancer in selected patients aged over 80 years: Outcomes from a multicenter study	Rinaldi, L.; Ouaissi, M.; Barabino, G.; Loundou, A.; Clavel, L.; Sielezneff, I.; Roblin, X.; Porcheron, J.; Williet, N.; Fuks, D.; Gayet, B.; Phelip, J. M.	2017	Dig Liver Dis	49	1	84-90
Perioperative complications after neoadjuvant chemotherapy with and without bevacizumab for colorectal liver metastases	Lubezky, N.; Winograd, E.; Papoulas, M.; Lahat, G.; Shacham-Shmueli, E.; Geva, R.; Nakache, R.; Klausner, J.; Ben-Haim, M.	2013	J Gastrointest Surg	17	3	527-32
Minimal invasive surgery in treatment of liver metastases from colorectal carcinomas: case studies and survival rates	Loffredo, D.; Marvaso, A.; Ceraso, S.; Cinelli, N.; Rocca, A.; Vitale, M.; Rossi, M.; Genovese, E.; Amato, B.; Cinelli, M.	2013	BMC Surg	13 Suppl 2	Sup pl 2	S45
Laparoscopic versus open liver resection for colorectal liver metastases: A systematic	Zhang, X. L.; Liu, R. F.; Zhang, D.; Zhang, Y. S.; Wang, T.	2017	Int J Surg	44		191-203

review and meta-analysis of studies with propensity score-based analysis						
Survival Advantage of Laparoscopic Versus Open Resection For Colorectal Liver Metastases: A Meta-analysis of Individual Patient Data From Randomized Trials and Propensity-score Matched Studies	Syn, N. L.; Kabir, T.; Koh, Y. X.; Tan, H. L.; Wang, L. Z.; Chin, B. Z.; Wee, I.; Teo, J. Y.; Tai, B. C.; Goh, B. K. P.	2019	Ann Surg			
Laparoscopic versus open liver resection for metastatic colorectal cancer: a metaanalysis of 610 patients	Schiffman, S. C.; Kim, K. H.; Tsung, A.; Marsh, J. W.; Geller, D. A.	2015	Surgery	157	2	211-22
Laparoscopic versus open major hepatectomy: a systematic review and meta-analysis of individual patient data	Kasai, M.; Cipriani, F.; Gayet, B.; Aldrighetti, L.; Ratti, F.; Sarmiento, J. M.; Scatton, O.; Kim, K. H.; Dagher, I.; Topal, B.; Primrose, J.; Nomi, T.; Fuks, D.; Abu Hilal, M.	2018	Surgery (United States)	163	5	985-995

Safety and efficacy for laparoscopic versus open hepatectomy: A meta-analysis	Jin, B.; Chen, M. T.; Fei, Y. T.; Du, S. D.; Mao, Y. L.	2018	Surg Oncol	27	2	A26-A34
Physical recovery after laparoscopic vs. open liver resection â€“ A prospective cohort study	Kampf, S.; Sponder, M.; Bergler-Klein, J.; Sandurkov, C.; Fitschek, F.; Bodingbauer, M.; Stremitzer, S.; Kaczirek, K.; Schwarz, C.	2019	International Journal of Surgery	72		224-229
Resection of synchronous liver metastases between radiotherapy and definitive surgery for locally advanced rectal cancer: short-term surgical outcomes, overall survival and recurrence-free survival	Labori, K. J.; Guren, M. G.; Brudvik, K. W.; RÃ¸sok, B. I.; Waage, A.; Nesbakken, A.; Larsen, S.; Dueland, S.; Edwin, B.; BjÃ¸rnbeth, B. A.	2017	Colorectal Dis	19	8	731-738
Minimally invasive versus open hepatectomy for colorectal cancer liver metastases: comparative study with propensity score matching		2018	Surg Endosc	32		S559â€

Laparoscopic versus open liver resection for metastatic colorectal cancer: A metaanalysis of 610 patients	Schiffman, S.; Kim, K.; Tsung, A.; Marsh, J. W.; Geller, D.	2014	HPB	16		537
Influence of surgical margin on type of recurrence after liver resection for colorectal metastases: a single-center experience	Nuzzo, G.; Giuliante, F.; Ardito, F.; Vellone, M.; Giovannini, I.; Federico, B.; Vecchio, F. M.	2008	Surgery	143	3	384-93
The prognosis of colorectal cancer liver metastases associated with inflammatory bowel disease: An exploratory analysis	Margonis, G. A.; Buettner, S.; Andreatos, N.; Wagner, D.; Sasaki, K.; Galjart, B.; Kamphues, C.; Pawlik, T. M.; Poultsides, G.; Kaczirek, K.; LÃ¸nning, P. E.; Verhoef, C.; Kreis, M. E.; Wolfgang, C. L.; Weiss, M. J.	2018	J Surg Oncol	118	7	1074-1080
Epidemiology and management of liver metastases from colorectal cancer	Manfredi, S.; Lepage, C.; Hatem, C.; Coatmeur, O.; Faivre, J.; Bouvier, A. M.	2006	Ann Surg	244	2	254-9

Positive regulatory effects of perioperative probiotic treatment on postoperative liver complications after colorectal liver metastases surgery: a double-center and double-blind randomized clinical trial	Liu, Z.; Li, C.; Huang, M.; Tong, C.; Zhang, X.; Wang, L.; Peng, H.; Lan, P.; Zhang, P.; Huang, N.; et al.,	2015	BMC gastroenterology	15		34
Benefits of Laparoscopic Approach for Resection of Liver Tumors in Cirrhotic Patients	Le Roux, F.; Rebibo, L.; Cosse, C.; Chatelain, D.; Nguyen-Khac, E.; Badaoui, R.; Regimbeau, J. M.	2018	J Laparoendosc Adv Surg Tech A	28	5	553-561
Impact of hepatic lymph node metastasis on survival of patients with synchronous resectable or unresectable liver metastases of colorectal cancer	Ishibashi, K.; Ishida, H.; Ohsawa, T.; Okada, N.; Kumamoto, K.; Haga, N.	2013	Tech Coloproctol	17	1	51-7

Factors associated with and outcomes of open conversion after laparoscopic minor hepatectomy: initial experience at a single institution	Goh, B. K. P.; Chan, C. Y.; Wong, J. S.; Lee, S. Y.; Lee, V. T. W.; Cheow, P. C.; Chow, P. K. H.; Ooi, L. L. P. J.; Chung, A. Y. F.	2015	Surg Endosc	29	9	2636-2642
Stroke volume variation in hepatic resection: A replacement for standard central venous pressure monitoring	Dunki-Jacobs, E. M.; Philips, P.; Scoggins, C. R.; McMasters, K. M.; Martin, Ii R. C. G.	2014	Ann Surg Oncol	21	2	473-478
Stage IV colorectal cancer: Outcomes following the liver-first approach	De Rosa, A.; Gomez, D.; Hossaini, S.; Duke, K.; Fenwick, S. W.; Brooks, A.; Poston, G. J.; Malik, H. Z.; Cameron, I. C.	2013	J Surg Oncol	108	7	444-449
Laparoscopic vs. open surgery for T4 colon cancer: A propensity score analysis	de'Angelis, N.; Vitali, G. C.; Brunetti, F.; Wassmer, C. H.; Gagniere, C.; Puppa, G.; Tournigand, C.; Ris, F.	2016	Int J Colorectal Dis	31	11	1785-1797

Multicentre propensity score-matched analysis of laparoscopic versus open surgery for T4 rectal cancer	de'Angelis, N.; Landi, F.; Vitali, G. C.; Memeo, R.; MartÃnez-PÃ©rez, A.; Solis, A.; Assalino, M.; Vallribera, F.; Mercoli, H. A.; Marescaux, J.; Mutter, D.; Ris, F.; Espin, E.; Brunetti, F.	2017	Surg Endosc	31	8	3106-3121
Laparoscopic Parenchymal-Sparing Resections for Nonperipheral Liver Lesions, the Diamond Technique: Technical Aspects, Clinical Outcomes, and Oncologic Efficiency	Cipriani, F.; Shelat, V. G.; Rawashdeh, M.; Francone, E.; Aldrighetti, L.; Takhar, A.; Armstrong, T.; Pearce, N. W.; Abu Hilal, M.	2015	J Am Coll Surg	221	2	265-272
Preoperative bevacizumab and surgery for colorectal liver metastases: a propensity score analysis	Bergeat, D.; Rayar, M.; Mouchel, Y.; Merdrignac, A.; Meunier, B.; LiÃ¨vre, A.; Boudjema, K.; Sulpice, L.	2017	Langenbecks Arch Surg	402	1	57-67

Complications after liver surgery: a benchmark analysis	Bagante, F.; Ruzzenente, A.; Beal, E. W.; Campagnaro, T.; Merath, K.; Conci, S.; AkgÃ¼l, O.; Alexandrescu, S.; Marques, H. P.; Lam, V.; Shen, F.; Poultsides, G. A.; Soubrane, O.; Martel, G.; Iacono, C.; Guglielmi, A.; Pawlik, T. M.	2019	HPB (Oxford)	21	9	1139-1149
Return to intended oncologic treatment (RIOT): a novel metric for evaluating the quality of oncosurgical therapy for malignancy	Aloia, T. A.; Zimmitti, G.; Conrad, C.; Gottumukalla, V.; Kopetz, S.; Vauthey, J. N.	2014	J Surg Oncol	110	2	107-14
Importance of response to neoadjuvant chemotherapy in patients undergoing resection of synchronous colorectal liver metastases	Allen, P. J.; Kemeny, N.; Jarnagin, W.; DeMatteo, R.; Blumgart, L.; Fong, Y.	2003	J Gastrointest Surg	7	1	109-117
Assessment of the financial implications for laparoscopic liver surgery: A single-centre	Abu Hilal, M.; Di Fabio, F.; Syed, S.; Wiltshire, R.; Dimovska, E.; Turner, D.;	2013	Surg Endosc	27	7	2542-2550

UK cost analysis for minor and major hepatectomy	Primrose, J. N.; Pearce, N. W.					
Laparoscopic Versus Open Liver Resection for Colorectal Liver Metastases: A Comprehensive Systematic Review and Meta-analysis	Xie, S. M.; Xiong, J. J.; Liu, X. T.; Chen, H. Y.; Iglesia-GarcÃ-a, D.; Altaf, K.; Bharucha, S.; Huang, W.; Nunes, Q. M.; Szatmary, P.; Liu, X. B.	2017	Sci Rep	7	1	1012
Laparoscopic liver resection as a safe and efficacious alternative to open resection for colorectal liver metastasis: a meta-analysis	Zhou, Y.; Xiao, Y.; Wu, L.; Li, B.; Li, H.	2013	BMC Surg	13		44
Laparoscopic synchronous resection of colorectal cancer and liver metastases: A systematic review	Moris, D.; Tsilimigras, D. I.; Machairas, N.; Merath, K.; Cerullo, M.; Hasemaki, N.; Prodromidou, A.; Cloyd, J. M.; Pawlik, T. M.	2019	J Surg Oncol	119	1	30-39
Simultaneous laparoscopic resection of primary colorectal cancer and associated liver metastases: A	Lupinacci, R. M.; Andraus, W.; De Paiva Haddad, L. B.; Carneiro Dâ€²Albuquerque, L. A.; Herman, P.	2014	Tech Coloproctol	18	2	129-135

systematic review						
A systematic review of a liver-first approach in patients with colorectal cancer and synchronous colorectal liver metastases	Lam, V. W.; Laurence, J. M.; Pang, T.; Johnston, E.; Hollands, M. J.; Pleass, H. C.; Richardson, A. J.	2014	HPB (Oxford)	16	2	101-8
Oncological outcomes of laparoscopic surgery of liver metastases: a single-centre experience	Cipriani, F.; Rawashdeh, M.; Ahmed, M.; Armstrong, T.; Pearce, N. W.; Abu Hilal, M.	2015	Updates Surg	67	2	185-91
Surgical and regional treatments for colorectal cancer metastases in older patients: A systematic review and meta-analysis	de'Angelis, N.; Baldini, C.; Brustia, R.; Pessaux, P.; Sommacale, D.; Laurent, A.; Le Roy, B.; Tacher, V.; Kobeiter, H.; Luciani, A.; Paillaud, E.; Aparicio, T.; CanuÃ¯-Poitrine, F.; Liuu, E.	2020	PLoS One	15	4	e0230914
Meta-analysis of laparoscopic versus open liver resection for colorectal liver metastases	Tian, Z. Q.; Su, X. F.; Lin, Z. Y.; Wu, M. C.; Wei, L. X.; He, J.	2016	Oncotarget	7	51	84544-84555

Comparative Short-term Benefits of Laparoscopic Liver Resection: 9000 Cases and Climbing	Ciria, R.; Cherqui, D.; Geller, D. A.; Briceno, J.; Wakabayashi, G.	2016	Ann Surg	263	4	761-77
Mini-invasive vs open resection of colorectal cancer and liver metastases: A meta-analysis	Ye, S. P.; Qiu, H.; Liao, S. J.; Ai, J. H.; Shi, J.	2019	World J Gastroenterol	25	22	2819-2832
Laparoscopic versus open hepatectomy with or without synchronous colectomy for colorectal liver metastasis: a meta-analysis	Wei, M.; He, Y.; Wang, J.; Chen, N.; Zhou, Z.; Wang, Z.	2014	PLoS One	9	1	e87461
What is the effect of laparoscopic colectomy on pattern of colon cancer recurrence? A propensity score and competing risk analysis compared with open colectomy	Hasegawa, H.; Okabayashi, K.; Watanabe, M.; Ashrafian, H.; Harling, L.; Ishii, Y.; Sugiyama, D.; Seishima, R.; Darzi, A.; Athanasiou, T.; Kitagawa, Y.	2014	Ann Surg Oncol	21	8	2627-35
Health related quality of life after laparoscopic and open liver resection. data from the OSLO-COMET	Fretland Ã…, A.; Dagenborg, V. J.; BjÃ¸rnelv, G. M.; Aghayan, D.; Kristiansen, R.; Fagerland, M. W.;	2018	HPB	20		S215

randomized controlled trial	Barkhatov, L.; BjÃ¸rnbeth, B. A.; Edwin, B.					
Radiologic and pathologic response to neoadjuvant chemotherapy predicts survival in patients undergoing the liver-first approach for synchronous colorectal liver metastases	Berardi, G.; De Man, M.; Laurent, S.; Smeets, P.; Tomassini, F.; Ariotti, R.; Hoorens, A.; van Dorpe, J.; Varin, O.; Geboes, K.; Troisi, R. I.	2018	Eur J Surg Oncol	44	7	1069-1077
Resection of colorectal liver metastases after second-line chemotherapy: is it worthwhile? A LiverMetSurvey analysis of 6415 patients	Adam, R.; Yi, B.; Innominato, P. F.; Barroso, E.; Laurent, C.; Giuliante, F.; Capussotti, L.; Lapointe, R.; Regimbeau, J. M.; Lopez-Ben, S.; Isoniemi, H.; Hubert, C.; Lin, J. K.; Gruenberger, T.; Elias, D.; Skipenko, O. G.; Guglielmi, A.	2017	Eur J Cancer	78		15-Jul
Synchronous resection of colorectal cancer liver metastasis :	Rho, S. Y.; Han, D. H.; Choi, J. S.; Choi, G. H.	2019	HPB	21		S295

propensity score matching of open versus minimally invasive surgery						
Laparoscopic Liver Resection is associated with lower mortality compared with open procedure for Colorectal Liver Metastases: A Meta-analysis of High-Quality Studies	Pan, L.; Fang, J.; Wang, Y. I.; Cai, X.	2019	HPB	21		S375-S376
One- Or Two-Stage Laparoscopic Right Hemihepatectomy After Portal Vein Embolization In Patients With Initially Unresectable Colorectal Liver Metastases: Technical Aspects And Clinical Results	GÃ¶rgec, B.; Suhool, A.; Al-jarrah, R.; Fontana, M.; Tehami, N.; Modi, S.; Hilal, M. A.	2020	International Journal of Surgery	75		S12
[Simultaneous laparoscopic excision for the treatment of rectal carcinoma and the synchronous hepatic metastasis]	Chen, K. Y.; Xiang, G. A.; Wang, H. N.; Xiao, F. L.	2009	Zhonghua Zhong Liu Za Zhi	31	1	69-71

Synchronous laparoscopic left lateral sectionectomy and laparoscopic right hemicolectomy for caecal carcinoma presenting with a synchronous liver metastasis	Chan, A. K. C.; Stylianides, N.; Siriwardena, A. K.	2018	Colorectal Disease	20		59
Robot-assisted one-stage resection of gastrointestinal and colorectal cancer and syncronous liver metastases: Our experience and literature review	Ceccarelli, G.; Marano, L.; Rocca, A.; Fontani, A.; Ermili, F.; De Rosa, M.; Andolfi, E.	2018	Surg Endosc	32		S631
[Effect of laparoscopic hepatectomy and microwave ablation for colorectal liver metastases]	Xu, S.; Hu, K.; Huang, H.; Yao, Z.; Wang, Q.; Yang, P.; Liu, B.; Yang, Y.; Chen, G.	2015	Zhonghua Yi Xue Za Zhi	95	40	3289-92
[Minimally invasive surgery for colorectal cancer with liver metastasis]	Wang, X. F.; Ruan, Y.; Li, W.; Zhou, S. J.; Peng, J. F.; Cai, X. J.	2009	Zhonghua Yi Xue Za Zhi	89	32	2277-9
Minimally Invasive versus Open Simultaneous Resections of Colorectal	Guo, Y.; Gao, Y.; Chen, G.; Li, C.; Dong, G.	2018	Am Surg	84	2	192-200

Cancer and Synchronous Liver Metastases: A Meta-Analysis						
Colorectal cancer with synchronous hepatic metastases: Systematic review of reports comparing synchronous surgery with sequential bowel-first or liver-first approaches	Baltatzis, M.; Chan, A. K.; Jegatheeswaran, S.; Mason, J. M.; Siriwardena, A. K.	2016	Eur J Surg Oncol	42	2	159-65
Parenchymal-sparing liver resections (open and laparoscopic) in metastatic colorectal cancer	Kvasivka, O.; Kopchak, K.; Beznosenko, A.	2019	HPB	21		S300
Outcomes of simultaneous laparoscopic colorectal and hepatic resection for patients with colorectal cancers: a comparative study	Jung, K. U.; Kim, H. C.; Cho, Y. B.; Kwon, C. H.; Yun, S. H.; Heo, J. S.; Lee, W. Y.; Chun, H. K.	2014	J Laparoendosc Adv Surg Tech A	24	4	229-35

Laparoscopic Versus Open Resection for Colorectal Liver Metastases: the OSLO-COMET Randomized Controlled Trial	Fretland, Ã…A; Dagenborg, V. J.; BjÃ¸rnelv, G. M. W.; Kazaryan, A. M.; Kristiansen, R.; Fagerland, M. W.; Hausken, J.; TÃ¸nnessen, T. I.; Abildgaard, A.; Barkhatov, L.; et al.,	2018	Ann Surg	267	2	199â€20 7
Early and Long-term Oncological Outcomes After Laparoscopic Resection for Colorectal Liver Metastases: A Propensity Score-based Analysis	Allard, M. A.; Cunha, A. S.; Gayet, B.; Adam, R.; Goere, D.; Bachellier, P.; Azoulay, D.; Ayav, A.; Navarro, F.; Pessaux, P.	2015	Ann Surg	262	5	794-802
Laparoscopic versus open liver resection in the posterosuperior segments: a sub-group analysis from the OSLO-COMET randomized controlled trial	Aghayan, D. L.; Fretland Ã…, A.; Kazaryan, A. M.; Sahakyan, M. A.; Dagenborg, V. J.; BjÃ¸rnbeth, B. A.; Flatmark, K.; Kristiansen, R.; Edwin, B.	2019	HPB	21	11	1485-1490

Part 2 includes studies that were excluded due to only having mixed data of staged and simultaneous. (n=14)

Title	Authors	Published Year	Journal	Volume	Issue	Pages
Early and long-term oncological outcomes after laparoscopic resection for colorectal liver metastases	Allard, M. A.; Cunha, A. S.; Gayet, B.; Adam, R.; Goere, D.; Bachellier, P.; Azoulay, D.; Ayav, A.; Navarro, F.; Pessaux, P.	2015	Ann Surg	262	5	794-802
Laparoscopic liver resection in metastatic colorectal cancer treatment: comparison with long-term results using the conventional approach	Maurette, R. J.; Ejarque, M. G.; Mihura, M.; Bregante, M.; Bogetti, D.; Pirchi, D.	2017	Ecancermedicalscience	11		775

Long-term and perioperative outcomes of laparoscopic versus open liver resection for colorectal liver metastases with propensity score matching: a multi-institutional Japanese study	Beppu, T.; Wakabayashi, G.; Hasegawa, K.; Gotohda, N.; Mizuguchi, T.; Takahashi, Y.; Hirokawa, F.; Taniai, N.; Watanabe, M.; Katou, M.; Nagano, H.; Honda, G.; Baba, H.; Kokudo, N.; Konishi, M.; Hirata, K.; Yamamoto, M.; Uchiyama, K.; Uchida, E.; Kusachi, S.; Kubota, K.; Mori, M.; Takahashi, K.; Kikuchi, K.; Miyata, H.; Takahara, T.; Nakamura, M.; Kaneko, H.; Yamaue, H.; Miyazaki, M.; Takada, T.	2015	J Hepatobiliary Pancreat Sci	22	10	711-20
Laparoscopic versus open resection of hepatic	Cannon, R. M.; Scoggins, C. R.; Callender, G.	2012	Surgery	152	4	567-73; discussion 573-4

colorectal metastases	G.; McMasters, K. M.; Martin, R. C., 2nd					
Minimally Invasive Resection of Colorectal Cancer Liver Metastases Leads to an Earlier Initiation of Chemotherapy Compared to Open Surgery	Tohme, S.; Goswami, J.; Han, K.; Chidi, A. P.; Geller, D. A.; Reddy, S.; Gleisner, A.; Tsung, A.	2015	J Gastrointest Surg	19	12	2199-206
Laparoscopic hepatic resection for metastatic liver tumor of colorectal cancer: comparative analysis of short- and long-term results	Iwahashi, S.; Shimada, M.; Utsunomiya, T.; Imura, S.; Morine, Y.; Ikemoto, T.; Arakawa, Y.; Mori, H.; Kanamoto, M.; Yamada, S.	2014	Surg Endosc	28	1	80-4
Oncologic results of laparoscopic versus open hepatectomy for colorectal liver metastases in two specialized centers	Castaing, D.; Vibert, E.; Ricca, L.; Azoulay, D.; Adam, R.; Gayet, B.	2009	Ann Surg	250	5	849-55
Outcomes of liver resection in patients with colorectal	Shim, J. R.; Lee, S. D.; Park, H. M.; Lee, E. C.;	2018	Ann Hepatobiliary Pancreat Surg	22	3	223-230

liver metastases by laparoscopic or open surgery	Park, B.; Han, S. S.; Kim, S. H.; Park, S. J.					
Efficacy of laparoscopic liver resection in colorectal liver metastases and the influence of preoperative chemotherapy	Kubota, Y.; Otsuka, Y.; Tsuchiya, M.; Katagiri, T.; Ishii, J.; Maeda, T.; Tamura, A.; Kaneko, H.	2014	World J Surg Oncol	12		351
Outcome of laparoscopic major liver resection for colorectal metastases	Topal, H.; Tiek, J.; Aerts, R.; Topal, B.	2012	Surg Endosc	26	9	2451-5
Analysis of Prognostic Factors for Resected Synchronous and Metachronous Liver Metastases from Colorectal Cancer	Bartolini, I.; Ringressi, M. N.; Melli, F.; Risaliti, M.; Brugia, M.; Mini, E.; Batignani, G.; Bechi, P.; Boni, L.; Taddei, A.	2018	Gastroenterol Res Pract	2018		5353727
Oncological safety of ultrasound-guided laparoscopic liver resection for colorectal metastases: a case-control study	Langella, S.; Russolillo, N.; D'Eletto, M.; Forchino, F.; Lo Tesoriere, R.; Ferrero, A.	2015	Updates Surg	67	2	147-55

Laparoscopic hepatectomy is safe and effective for the management of patients with colorectal cancer liver metastases in a population-based analysis in Ontario, Canada. A retrospective cohort study	Griffiths, C. D.; Xu, K.; Wang, J.; McKechnie, T.; Gafni, A.; Parpia, S.; Ruo, L.; Serrano, P. E.	2020	Int J Surg	83		47-52
Operative and short-term oncologic outcomes of laparoscopic versus open liver resection for colorectal liver metastases located in the posterosuperior liver: a propensity score matching analysis	Okuno, M.; Goumard, C.; Mizuno, T.; Omichi, K.; Tzeng, C. D.; Chun, Y. S.; Aloia, T. A.; Fleming, J. B.; Lee, J. E.; Vauthey, J. N.; Conrad, C.	2018	Surg Endosc	32	4	1776-1786

Part 3: Studies that were excluded after full-text extraction due to overlapping patient data with other studies. (n=4)

Title	Authors	Published Year	Journal	Volume	Issue	Pages
Multicentre propensity score-matched study of laparoscopic versus open repeat liver resection for colorectal liver metastases	van der Poel, M. J.; Barkhatov, L.; Fuks, D.; Berardi, G.; Cipriani, F.; Aljaiuossi, A.; Lainas, P.; Dagher, I.; D'Hondt, M.; Rotellar, F.; Besselink, M. G.; Aldrighetti, L.; Troisi, R. I.; Gayet, B.; Edwin, B.; Abu Hilal, M.	2019	Br J Surg	106	6	783-789
Laparoscopic liver resection compared to open approach in patients with colorectal liver	Montalti, R.; Berardi, G.; Laurent, S.; Sebastiani, S.; Ferdinande, L.; Libbrecht, L. J.;	2014	Eur J Surg Oncol	40	5	536-544

metastases improves further resectability: Oncological outcomes of a case-control matched-pairs analysis	Smeets, P.; Brescia, A.; Rogiers, X.; de Hemptinne, B.; Geboes, K.; Troisi, R. I.					
Laparoscopic Versus Open Liver Resection for Colorectal Metastases in Elderly and Octogenarian Patients: A Multicenter Propensity Score Based Analysis of Short- and Long-term Outcomes	Martinez-Cecilia, D.; Cipriani, F.; Shelat, V.; Ratti, F.; Tranchart, H.; Barkhatov, L.; Tomassini, F.; Montalti, R.; Halls, M.; Troisi, R. I.; Dagher, I.; Aldrighetti, L.; Edwin, B.; Abu Hilal, M.	2017	Ann Surg	265	6	1192-1200
Laparoscopic versus open two-stage hepatectomy for bilobar colorectal liver metastases: A bi-institutional, propensity score-matched study	Okumura, S.; Goumard, C.; Gayet, B.; Fuks, D.; Scatton, O.	2019	Surgery	166	6	959-966