|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **study** | **title** | **publication**  **year** | **time period** | **location** | **male** | **female** | **primary**  **in colon** | **primary**  **in rectum** | **synchronous**  **CRLM** | **metachronous**  **CRLM** | **% desmoplastic**  **CRLM** | **% pushing**  **CRLM** | **% replacement**  **CRLM** | **% mixed**  **CRLM** | **capsule independent** | **outcome assessed** | **pre-operative chemo** |
| **Dam 2017 18** | *International consensus guidelines for scoring the histopathological growth*  *patterns of liver metastasis* | 2017 | 2000-2015 | Department of Surgical Oncology, Erasmus MC Cancer Institute (Rotterdam, The Netherlands) | 241 | 133 | 204 | 170 | 243 (defined  as <1 year) | 131 | 49 | 3 | 47 | 1, excluded from survival analysis;  >50% predominance was considered sufficient | N | Y | ≥ 44% of patients |
| **Frentzas 2016,**  **London cohort 27** | *Vessel co-option mediates resistance to anti-angiogenic therapy in liver metastases* | 2016 | 2006-2012 | The Royal Marsden Hospital (RM), London, UK | 21 | 12 | 12 | 21 | n/a | n/a | 52,5 | 1,7 | 45,8 | n/a | N | Y | all  bev + chemo |
| **Frentzas 2016,**  **Montréal cohort 27** | *Vessel co-option mediates resistance to anti-angiogenic therapy in liver metastases* | 2016 | 2008-2014 | McGill University Health Centre (MUHC), Montréal, Canada | 35 | 24 | 39 | 20 | n/a | n/a | 51,6 | 3,1 | 45,3 | n/a | N | Y | all  bev + chemo |
| **Siriwardana 2016 28** | *Biological and prognostic significance of the morphological types and vascular patterns in colorectal liver metastases (CRLM) looking beyond the tumor margin* | 2016 | 1998-2008 | Royal Free Hospital,  London, UK | 18 | 8 | 18 | 6 | 7 | 19 | 43,3 | n/a | 43,3 | 10 | N | Y | N |
| **Serrablo 2016 29** | *Impact of novel histopathological factors on the outcomes of liver surgery for colorectal cancer metastases* | 2016 | 2004-2010 | n/a, Spain and/or Italy | n/a | n/a | n/a | n/a | n/a | n/a | 17 | 52,3 | 46,3 | n/a | Y | Y | reported separately |
| **Eefsen 2015a 13** | *Microvessel density and endothelial cell proliferation levels in colorectal liver metastases from patients given neo-adjuvant cytotoxic chemotherapy and bevacizumab* | 2015  (print 2016) | 2007-2011 | Rigshospitalet, Copenhagen, Denmark | 146 | 91 | 162 | 75 | 146 | 91 | 29,5 | 37,1 | 14,8 | 18,6 | N | N (for same cohort in Eefsen 2015b) | reported separately |
| **Brunner 2014 30** | *Prognosis according to histochemical analysis of liver metastases removed at liver resection* | 2014 | 2004-2010 | Regensburg, Germany | 118 | 83 | 119 | 82 | n/a | n/a | 37,8 | n/a | n/a | n/a | N | Y | reported separately |
| **Pinheiro 2014 31** | *Tumor growth pattern as predictor of colorectal liver metastasis recurrence* | 2014 | 2000-2009 | n/a, likely Sao Paulo, Brazil | 50 | 41 | n/a | n/a | 43 | 48 | n/a | 40,7 | 59,3 | n/a | N | Y | reported separately |
| **Wiggans 2012 32** | *Extended pathology reporting of resection specimens of colorectal liver metastases: The significance of a tumour pseudocapsule* | 2012  (print 2013) | 2010-2011 | Derriford Hospital, UK | 40 | 26 | n/a | n/a | 38 | 28 | 41,5 | n/a | n/a | n/a | N | Y | mixed |
| **Nyström 2012 33** | *Liver-metastatic potential of colorectal cancer is related to the stromal composition of the tumour* | 2012 | 1998-2009 | Västerbotten County,  Sweden | 25 | 23 | 29 | 18 | n/a | n/a | 45,8 | 52,1 | n/a | n/a | N | Y | mixed |
| **Van Den Eynden 2012 14** | *The histological growth pattern of colorectal cancer liver metastases has prognostic value* | 2012 | 1997-2005 | Royal Hallamshire Hospital, Sheffield, UK | n/a | n/a | 104 | 91 | 101 | 98 | 34,6 | 15,6 | 27,8 | 17,6 | N | Y | n/a |
| **Rajaganeshan 2007a 34** | *Biological characteristics and behaviour of putatively curatively resected colorectal liver metastases* | 2007  (print 2008) | 1993-2004 | St James’s University  Hospital, Leeds, UK | 60 | 49 | n/a | n/a | 19 | 90 | 34,8 | n/a | n/a | n/a | N | Y | untreated group reported in Rajaganeshan 2007b |
| **Stessels 2004 35** | *Breast adenocarcinoma liver metastases, in contrast to colorectal cancer liver metastases, display a non-angiogenic growth pattern that preserves the stroma and lacks hypoxia* | 2004 | n/a | General Hospital Sint-Augustinus and of the University Hospital of  Antwerp, Belgium | n/a | n/a | n/a | n/a | n/a | n/a | 50 | 17,9 | 32,1 | n/a | N | N | n/a |
| **Terayama 2002 36** | *Peritumoral rim enhancement of liver metastasis: Hemodynamics observed on single-level dynamic CT during hepatic arteriography and histopathologic correlation* | 2002 | n/a | Kanazawa University School of Medicine, Japan | 24 | 5 | n/a | n/a | n/a | n/a | 10,5 | n/a | n/a | n/a | N | N | n/a |
| **Yamaguchi 2002 37** | *Mode of infiltrative growth of colorectal liver metastases is a useful predictor of recurrence after hepatic resection* | 2002 | 1981-1998 | Nagasaki University  School of Medicine,  Japan | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 38,1 | 61,9 | n/a | N | Y | n/a |
| **Vermeulen 2001 12** | *Liver metastases from colorectal adenocarcinomas grow in three patterns with different angiogenesis and desmoplasia* | 2001 | n/a | University Hospital Antwerp and AZ Sint-Augustinus, Belgium | n/a | n/a | n/a | n/a | n/a | n/a | 42,3 | 46,2 | 11,5 | n/a | N | N | excluded |
| **Weber 2001 38** | *Is a proliferation index of cancer cells a reliable prognostic factor after hepatectomy in patients with colorectal liver metastases?* | 2001 | 1988-1998 | Hôpital Universitaire de Hautepierre, Strasbourg, France | 132 | 89 | 142 | 76 | 90 | 131 | 28,5 | 34,8 | 65,2 | n/a | Y | Y | n/a |
| **Lunevicius 2001 39** | *Clinicopathological significance of fibrotic capsule formation around liver metastasis from colorectal cancer* | 2001 | 1983-1997 | Aichi Cancer Center,  Japan | n/a | n/a | n/a | n/a | n/a | n/a | 20,3 | n/a | n/a | n/a | N | Y | n/a |
| **Okano 2000 40** | *Fibrous pseudocapsule of metastatic liver tumors from colorectal carcinoma: Clinicopathologic study of 152 first resection cases* | 2000 | 1992-1996 | National Cancer Center Hospital, Tokyo, Japan | 104 | 48 | n/a | n/a | 46 | 106 | 61,1 | n/a | n/a | n/a | N | Y | n/a |
| **Ambiru 1999 41** | *Hepatic resection for colorectal metastases: Analysis of prognostic factors* | 1999 | 1984-1997 | Chiba University School of Medicine, Japan | 104 | 62 | 109 | 53 | 71 | 91 | 27,9 | n/a | n/a | n/a | N | Y | n/a |
| **Nagashima 1999 11** | *Histopathological prognostic factors influencing long-term prognosis after surgical resection for hepatic metastases from colorectal cancer* | 1999 | 1981-1994 | Tokyo University Hospital, Japan | 48 | 11 | n/a | n/a | 24 | 35 | 80 | 91,5 | 8,5 | n/a | Y | Y | n/a |
| **Terayama 1996 42** | *Histologic growth patterns of metastatic carcinomas of the liver.* | 1996 | n/a | Kanazawa University  School of Medicine,  Japan | 6 | 7 | 13 | n/a | n/a | n/a | 15,4 | 76,9 | 7,7 | n/a | N | N | n/a |
| **Yamamoto 1995 43** | *Pathologic support for limited hepatectomy in the treatment of liver metastases from colorectal cancer* | 1995 | 1991-1992 | National Cancer Center Hospital, Tokyo, Japan | 26 | 14 | 27,  multiple  primaries | 12,  multiple  primaries | 8 | 32 | 70 | n/a | n/a | n/a | N | N | n/a |
| **Morino 1991 44** | *Clinico-pathological Features of Liver Metastases from Colorectal Cancer in Relation to Prognosis* | 1991 | 1980-1986 | Kyoto University Hospital, Japan | 16 | 13 | 12 | 17 | 11 | 18 | 27,6 | 20,7 | 34,5 | 41,4 | Y | Y | n/a |