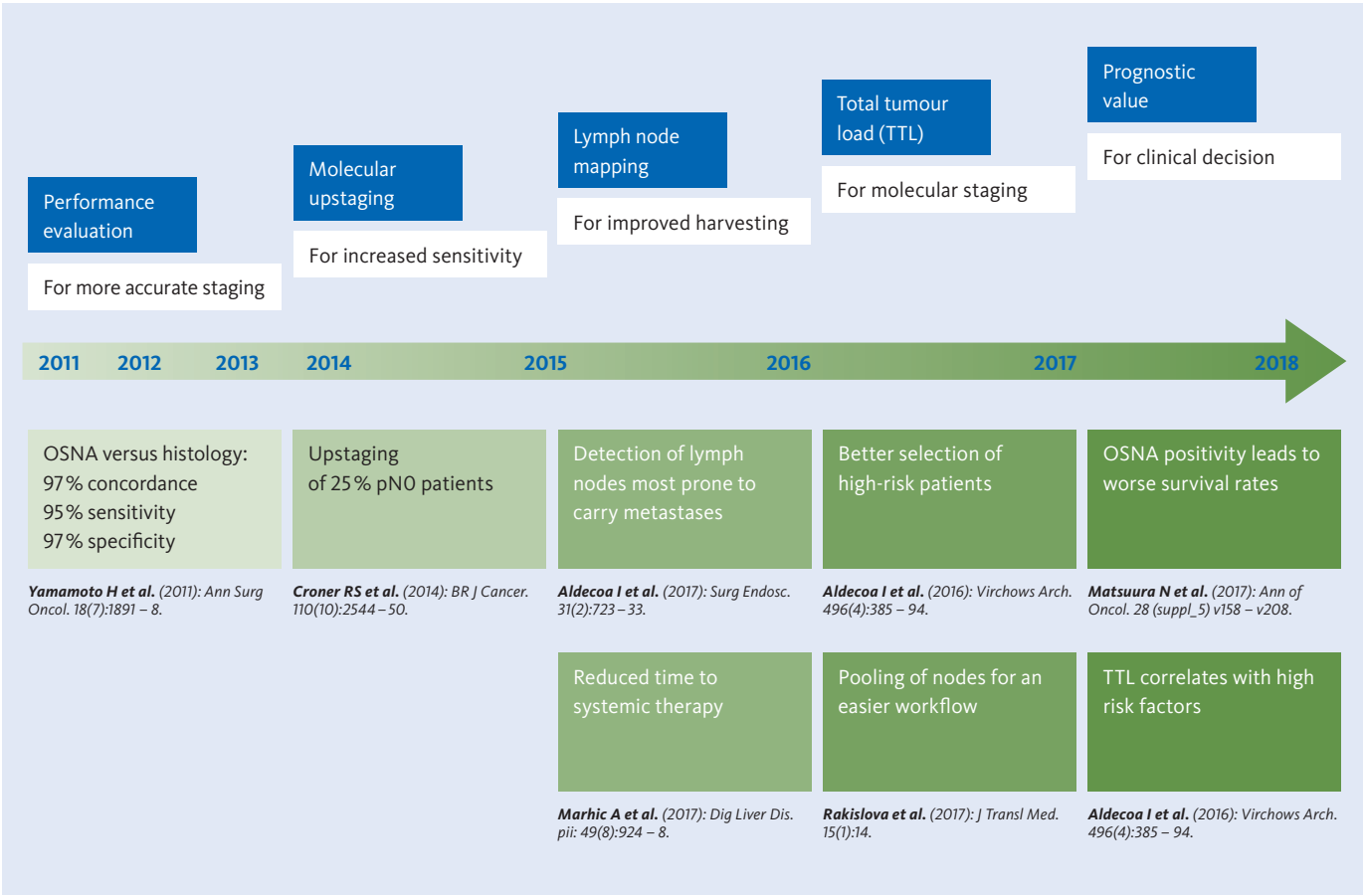
OSNA

Molecular analysis of lymph node metastases for more reliable staging in colorectal cancer

Lymph node status is a critical factor to predict outcomes and identify patients eligible for chemotherapy. Although histopathology based on H&E is a standard method for lymph node analysis, 30 % of patients diagnosed with negative lymph nodes develop recurrences, likely due to undetected metastases. The major limitation of histopathology is that only a tiny volume of the lymph node is assessed, leaving most parts of the node unanalysed. Molecular analysis of the whole lymph node by OSNA can accurately detect the presence of metastases, even very small metastases. OSNA can provide an accurate staging and help to identify patients with a high risk of recurrence. Recent data shows that the OSNA results provide also valuable prognostic information on a patient's survival.

Molecular analysis of lymph node metastases – evolution of the clinical value



OSNA – molecular analysis of lymph node metastases for more reliable staging in colorectal cancer

Selected publications

[1] ***Matsuura N et al.*** *(2017): Clinical impact of molecular positive lymph node status in colorectal cancer. Ann of Oncol. 28 (suppl_5): v158 – v208.*

Key message: *OSNA positivity correlates with a worse three-year DFS demonstrating the prognostic value of molecular staging in early-stage CRC patients.*

[2] ***Marhic A et al.*** *(2017): Molecular analysis of sentinel lymph node in colon carcinomas by one-step nucleic acid amplification (OSNA) reduces time to adjuvant chemotherapy interval. Dig Liver Dis. pii: 49(8):924 – 8.*

Key message: *In comparison with conventional histopathology, OSNA can almost halve the time between surgery and administration of chemotherapy from 67 days to 35 days.*

[3] ***Rakislova N et al.*** *(2017): Lymph node pooling: a feasible and efficient method of lymph node molecular staging in colorectal carcinoma. J Transl Med. 15(1):14.*

Key message: *Pooling lymph nodes is a new method allowing to analyse a high number of lymph nodes simultaneously and providing the patient's tumour burden, measured as the TTL.*

[4] ***Aldecoa I et al.*** *(2016): Molecularly determined total tumour load in lymph nodes of stage I-II colon cancer patients correlates with high-risk factors. A multicentre prospective study. Virchows Arch. 469(4):385 – 94.*

Key message: *The TTL is the sum of CK19 mRNA copy numbers of each positive lymph node. TTL is an objective and quantitative measure that may better support the staging of early colorectal cancer patients.*

[5] ***Aldecoa I et al.*** *(2017): Endoscopic tattooing enhances detection of lymph nodes most prone to harbor tumor burden. Surg Endosc. 31(2):723 – 33.*

Key message: *Endoscopic tattooing allows to analyse the lymph nodes, which most likely hold metastases, and increase the number of harvested lymph nodes.*

[6] ***Yamamoto H et al.*** *(2016): OSNA-assisted molecular staging in colorectal cancer: a prospective multicenter trial in Japan. Ann Surg Oncol. 23(2):391 – 6.*

Key message: *The sum of OSNA quantitative results, called 'total tumour load' (TTL), has shown to increase as the number of positive lymph nodes increased.*

[7] ***Vogelaar FJ et al.*** *(2014): The diagnostic value of one-step nucleic acid amplification (OSNA) for sentinel lymph nodes in colon cancer patients. Ann Surg Oncol. 21(12):3924 – 30.*

Key message: *Ex-vivo sentinel lymph node mapping (SLNM) has shown to improve staging with high accuracy (90 – 100 %) and an upstaging rate of 19 – 57 %. In combination with OSNA, SLNM may raise the detection of positive lymph nodes and provide a reliable basis for staging.*

[8] ***Croner RS et al.*** *(2014): Molecular staging of lymph node-negative colon carcinomas by one-step nucleic acid amplification (OSNA) results in upstaging of a quarter of patients in a prospective, European, multicentre study. BR J Cancer. 110(10):2544 – 50.*

Key message: *25 % of initially histology-negative lymph node patients were upstaged thanks to the analysis of the whole lymph nodes by OSNA.*

[9] ***Yamamoto N et al.*** *(2013): An optimal mRNA marker for OSNA based lymph node metastasis detection in colorectal cancer patients. Jpn J Clin Oncol. 43(3):264 – 70.*

Key message: *CK19 has shown to be the most sensitive and specific marker for lymph node metastases in colorectal cancer, when tested on histology-positive and negative lymph nodes, in comparison to other markers.*

[10] ***Yamamoto H et al.*** *(2011): OSNA-based novel molecular testing for lymph node metastases in colorectal cancer patients: results from a multicenter clinical performance study in Japan. Ann Surg Oncol. 18(7):1891 – 8.*

Key message: *OSNA has shown to be equivalent to the 2-mm-interval histopathology and can improve the detection of metastases by analysing the whole lymph node.*

Authorised representative: Sysmex Europe GmbH
Bornbarch 1, 22848 Norderstedt, Germany · Phone +49 40 52726-0 · Fax +49 40 52726-100 · oncology@sysmex-europe.com · **www.sysmex-europe.com**

Manufacturer: Sysmex Corporation
1-5-1 Wakinohama-Kaigandori, Chuo-ku, Kobe 651-0073, Japan · Phone +81 78 265-0500 · Fax +81 78 265-0524 · **www.sysmex.co.jp**

You will find your local Sysmex representative's address under www.sysmex-europe.com/contacts

ZE001828.EN.N.11/18