

using ROMA values in clinical practice in these patients especially in setting when there is discordance between clinical, radiological imaging and CA 125 values to appropriately manage the patients.

Conflict of interest: No conflict of interest.

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MAPPING OF THE FUNCTIONAL ANATOMY OF LYMPHATIC DRAINAGE TO THE AXILLA IN EARLY BREAST CANCER: A COHORT STUDY OF 933 CASES

B. Dorogi¹, T. Matrai¹, B. Bukovszky², A. Savolt¹, C. Polgar², P. Kelemen¹, T. Kovacs³, F. Renyi-Vamos⁴, G. Ivady⁵, E. Kovacs⁶, M. Teglas⁷, M. Kasler¹, Z. Matrai¹. ¹National Institute of Oncology, Breast and Sarcoma Center, Budapest, Hungary; ²National Institute of Oncology, Centre of Radiotherapy, Budapest, Hungary; ³Guy's and St Thomas's Hospitals NHS Foundation Trust, Department of Breast Surgery, London, United Kingdom; ⁴National Institute of Oncology, Thoracic Surgery Department, Budapest, Hungary; ⁵National Institute of Oncology, Department of Molecular Pathology, Budapest, Hungary; ⁶National Institute of Oncology, Department of Diagnostic Radiology, Budapest, Hungary; ⁷National Institute of Oncology, Department of Nuclear Medicine, Budapest, Hungary

Background. The aims of this study were to investigate the correlation between lymphatic drainage and the sentinel lymph node (SLN) status of the subregions in the context of the clinico-pathological parameters of the tumour and the coverage of the axillary volumes by standard and high tangential fields (STgF and HTgF) for whole breast radiotherapy and axillary reverse mapping (ARM).

Materials and methods. This was a retrospective study of prospectively collected data of 933 women with early breast cancer and clinically negative axillary status. Patients underwent breast surgery and sentinel lymph node biopsy (SLNB) followed by axillary lymph node dissection (ALND) in SLN-positive cases. The subregional localisation of the SLN(s) was identified and registered intraoperatively and completed with the clinic-pathological characteristics of the breast tumour afterwards. All recorded parameters were statistically analysed. In node-positive patients treated with breast-conserving therapy in whom the SLNs were found in the anterior or posterior axillary subregions (Level I), the axillary volumes (Levels I, II and III) were contoured using the Radiation Therapy Oncology Group contouring atlas (n=61). All patients (n=61) had 3D-conformal RT. The breast was irradiated with two opposing tangential fields with 6 MV photons. The STgF upper margin was generally the base (± 1 cm) of the clavicle. HTgF consisted of a superior border placed at the inferior edge (or below maximum 2 cm) of the humeral head.

Results. None of the examined characteristics of the primary breast cancer had a significant correlation with the subregional localisation of the SLN. The correlation between the localisations of the positive SLNs and the breast tumour was significant ($p=0.031$). In 91.1% (n=797) of the cases, the SLN appeared in the anterior, posterior or central subregions.

Using HTgF, Level I was completely included in the fields in 65.6% (40/61) of the cases. With STgF, the complete coverage was 0% (HTgF versus STgF, $p<0.0001$). Using HTgF, Level II was completely included in the fields in 6.6% of the patients (4/61), but with STgF, the rate was 0% (HTgF versus STgF, $p=0.1198$). The coverage of Level III was very poor.

A total of 281 (30.1%) SLNs were found within one of the apical, lateral or posterior subregions and 22.4% (n=63) of them were positive, meaning that 6.8% of all cases had one positive lymph node in the expected ARM lymph node regions.

Conclusion. A SLN is more than likely to be present in the anterior, posterior and central axillary subregions. Tangential fields allow only limited coverage of the axillary volumes. In some patients, using HTgFs with the accurate definition of axillary nodal levels ensures adequate coverage of Level I volume. Preserving the lateral subregion during ARM may increase the possibility of understaging.

Conflict of interest: No conflict of interest.

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EORTC 1409 GITCG / ESO 01 - A PROSPECTIVE COLORECTAL LIVER METASTASIS DATABASE WITH AN INTEGRATED QUALITY ASSURANCE PROGRAM (CLIMB): PRIMARY ANALYSIS OF VARIATIONS IN

EUROPEAN CLINICAL PRACTICES AND SURGICAL COMPLICATIONS AFTER COMPLEX LIVER METASTASIS SURGERIES

C.I. Caballero¹, L. Carrion Alvarez², H. Nilsson³, T. Ruers⁴, P. Senellart⁵, M. Rivoire⁶, S. Staettner⁶, F. Primavesi⁶, R. Troisi⁷, T. Gruenberger⁸, J. Heil⁹, A. Schnitzbauer⁹, N. Rahbari¹⁰, R.J. Swijnenburg¹¹, H. Malik¹², M. Protic¹³, A. Neven¹⁴, M. Mauer¹, G. Poston¹⁵, S. Evrard¹⁶. On behalf of EORTC Gastrointestinal Cancer Group and ESO Clinical Research Committee¹ EORTC, Medical, Brussel, Belgium; ²Hospital Universitario de Fuenlabrada, Surgery, Madrid, Spain; ³Karolinska Institutet, Department of Clinical Sciences Danderyd, Stockholm, Sweden; ⁴Netherlands Cancer Institute, Antoni van Leeuwenhoek Hospital, Amsterdam, Netherlands; ⁵Leon Berard Cancer Center, Surgery, Lyon, France; ⁶Medical University of Innsbruck, Department of Visceral- Transplantation and Thoracic Surgery, Innsbruck, Austria; ⁷Ghent University Hospital Medical School, Surgery, Ghent, Belgium; ⁸Rudolfstiftung Hospital, Surgery, Vienna, Austria; ⁹Universitätsklinikum Frankfurt Goethe-Universität, Department of General and Visceral Surgery, Frankfurt, Germany; ¹⁰University Hospital Dresden, Department of Visceral- Thoracic and Vascular Surgery, Dresden, Germany; ¹¹Leiden University Medical Center, Surgery, Leiden, Netherlands; ¹²Aintree University Hospital NHS Trust, Surgery, Liverpool, United Kingdom; ¹³Oncology Institute of Vojvodina, Surgery, Sremska Kamenica, Serbia; ¹⁴EORTC, Statistics, Brussel, Belgium; ¹⁵University Hospital Aintree, Surgery, Liverpool, United Kingdom; ¹⁶Institut Bergonié- Université de Bordeaux, Digestive Surgery, Bordeaux, France

EORTC & ESO developed an infrastructure for surgical quality assurance (QA) in clinical trials (SURCARE) to advance the surgical research agenda in Europe. The first project is CLIMB, a prospective study to benchmark practices for unresectable or borderline resectable colorectal liver metastasis (CRLM) surgery. Quality indicators included multidisciplinary team (MDT), use of biomarker testing, type of chemotherapy regimen, imaging used pre-surgery and complications rates.

CLIMB included 14 specialized centers in 9 countries. Eligible patients were registered after MDT & pre-surgery. Primary endpoint was 30 & 90 day surgical complication rate (Clavien-Dindo Classification). Onsite visits and central review ensured prospective data collection of current practices per country on biomarker testing, imaging, chemotherapy & liver surgery. Over all complication rates until post-op day 90 were analyzed. Trend of complications will be given to sites with at least 10 postop patients. Long-term outcome, correlation of complication with recurrences & overall survival will be reported when all patients will have been followed for 2 years after registration.

Among 210 patients registered, 126 (60%) who had at least one liver surgery were analyzed. 73% had left-sided or rectal primary tumor, 95.2% had synchronous primary and liver metastasis, 19.8% had extra-hepatic lesions and CRLM. An MDT with liver surgeon, oncologist and radiologist assessed patients with a median of 30.5 days from last MDT to surgery. AT, FR, BE, DE, ES performed biomarker testing for 70-100% of their patients while < 40% was done in NL or SW. 122 (96.8%) received pre-surgery chemotherapy with a median duration of 4.9 months. Among those, 86.9% used only 1 regimen, usually FOLFOX. Only 65.1 % received targeted therapy, with >70% from BE, FR, AT and ES in contrast to SW with only 5.6%. Median time interval of last pre-surgery imaging was 34.5 days. Among those with pre-surgery image data (87.7%), 54.1% received less than CT scan with MRI while 45.9% received at least CT with MRI (mostly in AT & NL). Most patients (N = 95, 75.4%) had one stage liver surgery while 30 (23.8%) had two stage liver surgery, 10 of whom had ALPSS. Over-all complication rates for one stage surgery were 53.7% (95% CI 43%- 64%), 17.9% (95% CI: 11%-27%) with grade ≥ 3 and 93.3% (95% CI: 78%- 99%) for two stage surgery, 46.7% (95% CI: 28%- 66%) with grade ≥ 3 including two deaths. Infections, bile leak, post hepatectomy liver failure grade A, fluid retention and anemia were most commonly reported.

CLIMB prospectively collected data on upfront unresectable CRLM surgery. Two-stage surgery had more Clavien-Dindo grade ≥ 3 complications. Harmonizing standards in MDT evaluation, biomarker testing and imaging may improve outcomes. **SURCARE** will use these indicators to develop trials with enhanced QA methods to improve cancer surgery.

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