

transmural care pathway, and if available the follow up or aftercare pathway has been studied, as well as PREM and PROM outcomes. A patient advocate is actively involved to provide valuable input.

**Results:** Preliminary results after the first interviews indicate variation regarding the following topics: tasks and responsibilities of health care professionals in breast cancer follow up and aftercare, patient information and quality of shared decision making.

**Conclusion:** Preliminary results show that for several topics regarding follow up and aftercare for breast cancer patients variation is present. After presenting these variations and sharing best practices on national level, we hope to achieve (1) more uniformity as well as an improved follow up and aftercare for breast cancer patients in the Netherlands based on best practices, (2) the revision of the section "follow up and aftercare" in the national guideline for breast cancer, (3) the deployment of nursing disciplines, and (4) the application of PROM outcomes.

**No conflict of interest.**

111

Poster

### Long-term prognosis is associated with residual disease after neoadjuvant systemic therapy but not with initial nodal status

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**Background:** This is a follow-up analysis of the Swedish prospective multicenter trial with the primary aim to determine invasive disease-free (IDFS), breast cancer-specific (BCSS) and overall survival (OS) rates and their association with axillary staging results before and after neoadjuvant systemic therapy (NAST).

**Patients and Methods:** In this follow-up analysis, 417 women treated with NAST for a clinically node-positive (cN+) or -negative (cN0) primary breast cancer between 2010 and 2015 were included. Patients had a sentinel lymph node biopsy (SLNB) before and/or after NAST and a completion axillary lymph node dissection (ALND) after NAST. Follow-up was until February 2019. The main outcome measures were IDFS, BCSS and OS. Uni- and multivariable Cox regression analyses were used to identify independent factors associated with survival.

**Results:** Median follow-up was 48 months (range 7-114). Nodal status after but not before NAST was significantly associated with crude survival: residual nodal disease (ypN+) resulted in a significantly shorter five-year OS when compared with complete nodal response (ypN0: OS 83.3 versus 91.0%, p=0.017). The agreement between breast (ypT) and nodal (ypN) status after NAST was high, and more so in cN0 (64/66, 97.0%) than in cN+ patients (49/60, 81.7%, p=0.005). On multivariable analysis, ypN0 (HR 0.41, 95% CI 0.22-0.74, p=0.003) and local radiotherapy (HR 0.23 (0.08-0.64, p=0.005) were associated with improved, while triple-negative tumors were associated with worse IDFS.

**Conclusions:** The present findings underline the prognostic significance of post-NAST but not pre-NAST nodal status and thus confirm the clinical value of surgical axillary staging after NAST.

**No conflict of interest.**

112

Poster

### Development of an information standard for breast cancer in the Netherlands

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**Background:** In clinical practice the same data items needed for clinical decision making are often registered many times by different caregivers in different systems. This is time consuming, prone to mistakes. In the

Netherlands an Information Standard for Oncology (ISO) for breast cancer has been developed. An ISO is a defined set of items, directly related to the course of the disease and care pathway<sup>1</sup>. Why is this important and what are the implications?

**Methods:** The ISO breast cancer was developed along the revision of the evidence based guideline which was released in 2012. The size and complexity of this guideline, over 200 pages text, gave rise to develop a schematic representation of the recommendations in the form of decision trees. Each decision tree contains nodes (representing patient- or disease characteristics, e.g. tumor stage), branches (representing cut-off points, e.g. stage <II) and leaves (recommendations). An ISO is based on these nodes (data-items) and branches (values) and thus contains all information needed to support clinical decision-making about treatment.

**Results:** Implementation of ISOs in electronic health records (EHR) has a considerable impact on clinical practice. Standard terminology First, by using a standard terminology an ISO reduces the huge registration burden for caregivers. The ISO facilitates the reuse and electronic exchange of data. Secondly, the availability of standardized structured information in an EHR supports clinical decision making during multidisciplinary team meetings. This makes it possible to support application of clinical decision support tools like Oncoguide (www.oncoguide.ai), which become increasingly important with the growing complexity of guidelines. And finally, structured data can be reused for export to external registries for auditing or research.

Currently, the ISO breast cancer contains 114 data items, originating from pathology (49%) and radiology reports (27%), patient characteristics (12%) and items for multidisciplinary team discussion (12%). The items are coded by international systems such as SNOMED-CT. It is co-designed by members of the National Breast Cancer Network Netherlands (NABON) guideline working group. It is published online (in Dutch) on the ART-DECOR platform (<http://tiny.cc/ISObreastcancer>) and NABON website (www.nabon.nl). The implementation of the ISO breast cancer into the EHR has started in two Dutch hospitals.

**Conclusion:** ISOs are a prerequisite to maximize reusing patient information for improved continuity of care and research, with minimal registration burden for caregivers. The ISO breast cancer is developed and implementation in the first EHRs has started.

**No conflict of interest.**

113

Poster

### PD-L1 and HSP-70 molecules are part of immunosuppressive environment in the deep layer of the lymphocyte predominant breast cancer (LPBC)

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**Background:** Tumor infiltrating lymphocytes (TILs) are involved in host immunity against tumor cells. However, in later phases of the disease high TIL infiltration is related to disease progression. Tumor immunogenicity is strongly correlated with the higher tumor mutation burden. Triple negative (TN) and HER-2 enriched breast cancers have the highest immunogenic potential so the aim of our study was to investigate the TIL infiltration and expression of PD-L1, HSP-70 in such tumors.

**Material and Methods:** TIL infiltration was investigated in the 112 tissue samples of TN and HER-2 enriched breast cancers of women diagnosed and treated in the Clinical Hospital Centre Rijeka, Croatia, in the period between 2008 and 2016. The invasive front of the tumor (host-tumor interface), the surface layer, as well as the deep layer of the tumor were analysed. Immunohistochemistry staining of PD-L1 (SP142), HSP70 (ab2787), CD4 (SP35 Cell Marque) and CD8 (144B DakoCytomation) was performed. The results were analysed using Statistica 13 software.

**Results:** Overall, there is a statistically significant correlation of high (over 50%) TIL infiltration with longer 5-year survival (p = 0.035, Long rank test). In the surface layer of the tumor (invasive front) there is statistically significant correlation of the intermediate TIL infiltration with the higher survival (p = 0.051, Long rank test) whereas there is no significant difference in the deep layer of the tumor. There is significant association of TIL infiltration with CD8+ T lymphocyte expression in the surface and deep layers of the tumor (Mann Whitney U test, p = 0.004 and p < 0.001, respectively), CD4+ lymphocyte expression (p < 0.001, p < 0.001, respectively) and PD-L1 expression (p < 0.001, p < 0.001, respectively). Statistically significant correlation of TIL infiltration and HSP-70 protein was only detected in the deep tumor layer (Mann Whitney U test, p < 0.001). Furthermore, in the TIL infiltrated deep tumor layer there is statistically significant positive correlation of PD-L1 and HSP-70 expression (Mann Whitney U test, p = 0.029) as well as positive