CoMPaS correctly describes the growth period of the PT, which corresponds to the TNM and ER/PR/HER2/Ki-67 subtype classification, the growth period of the sdMTSs and the 1–15-year survival of BC patients, taking into account TNM and ER/PR/HER2/Ki-67 subtypes classification. CoMPaS correctly describes the growth of the PT in ER/PR/HER2/Ki-67 subtypes of BC patients and helps to calculate the different recurrence periods, depending on the TVDTart. when sdMTSs might appear.

**Conclusion(s):** CoMPaS and the corresponding software tool can help (Tyuryumina E. et al, 2017, 2018, 2019, 2020):

1. to optimize the process of detecting the different recurrence periods for sdMTSs in BC patients with different tumor subtypes ER/PR/HER2/Ki-67 and the growth rate of the PT and sdMTSs;
2. to start the early treatment of small sdMTSs in BC patients with different tumor subtypes ER/PR/HER2/Ki-67;
3. to increase the survival of BC patients with sdMTSs of different tumor subtypes ER/PR/HER2/Ki-67; and
4. to consider the patient to be almost healthy if sdMTSs do not appear during the different recurrence periods.

**Conflict of Interest:** No significant relationships.

**P109**

**Effectiveness of breast-conserving treatment for minimal residual tumors after neoadjuvant breast cancer therapy**

R. Pesotsky1, V. Semiglazov1, S. Ereschenko1, A. Bessonov1, A. Emelyanov1, T. Tabagau1, A. Komyahov1, O. Ivanova1, E. Zhiltsova1, K. Nikolaev1, V. Letchenko1, K. Zirov1, K. Krivorotko1, 2. *Breast Tumors Department, FSBI of Oncology named after N.N.Petrov of the Ministry of Healthcare of Russian Federation, Saint-Petersburg, Russian Federation;
2. FGBOU VO North-Western State Medical University named after I.I. Mechnikov of the Ministry of Healthcare of Russian Federation, Saint-Petersburg, Russian Federation

**Goals:**
1. To determine the frequency of detecting a minimal residual tumour of breast using physical methods (examination, palpation), radiation diagnostic methods: ultrasound, SPECT, mammography, vacuum aspiration biopsy or another type of biopsy and/or detection of metastases in regional lymph nodes (directed signal biopsy) in addition to the standard pathomorphological examination of the surgical specimen and regional (including sentinel) lymph nodes. 2. To study the long-term results of patients (local-regional recurrence, survival) with residual (including minimal disease) and with regression (pCR) after neoadjuvant systemic therapy, in comparison with patients with primary minimal breast cancer. 3. To develop an algorithm for treating patients with minimal residual disease and complete clinical response to neoadjuvant systemic therapy for breast cancer.

**Methods:** Retrospective analysis of data on neoadjuvant systemic treatment of patients with primary resectable and locally advanced forms of breast cancer, carried out at the Petrov National Medical Research Center of Oncology of the Ministry of Health of Russian Federation in the period from 2011 to 2019. The rates of disease (relapse)-free and overall survival of patients with residual (minimal) disease, after neoadjuvant systemic therapy (150 patients) and with primary minimal breast cancer (150 patients), based on data obtained from the database of the cancer registry of breast tumors (without randomization, only taking into account the stratification of other characteristics: breast cancer phenotype, grade of malignancy, proliferative activity Ki67).

**Results:** Survival rates between the two groups are comparable, however, in the group of patients who have achieved pCR and regression of lesion to the size of minimal carcinoma, survival rates depend on the molecular subtype and the initial stage of the disease, as well as the quality of life. The pCR rate frequency correlates with the biological subtype of the tumor: pCR is most often recorded in HER2 overexpressing, triple negative and luminal B breast cancer subtypes.

**Conclusion(s):** The development of an effective breast-conserving treatment of minimal residual tumors after neoadjuvant therapy for breast cancer will make it possible to abandon crippling, massive surgical interventions (radical mastectomy with ALD), ensuring rapid rehabilitation and a high quality of life for patients.

**Conflict of Interest:** No significant relationships.

**P110**

**Evaluation of incidental implantation of tumor cells after diagnostic needle biopsy in breast cancer patients**

H. Maseki1, K. Jimbo1, U. Nakadaira1, C. Watase1, T. Murata1, S. Shiino1, S. Takayama1, N. Yamamoto2, M. Yoshida2, A. Suto1. *Breast Surgery, National Cancer Center Hospital, Tokyo, Japan; 2Pathology, National Cancer Center Hospital, Tokyo, Japan

**Goals:** Implantation within the biopsy scar using core needle biopsy (CNB) or vacuum aspiration biopsy (VAB) has been noted as a risk factor for ipsilateral breast cancer recurrence (IBTR). However, the risk factors for implantation have not yet been adequately studied. Thus, we aimed at evaluating the practical characteristics of and the risk factors for implantation at our hospital.

**Methods:** We retrospectively reviewed 4400 consecutive breasts of patients who underwent CNB or VAB followed by breast cancer surgery without neoadjuvant chemotherapy or endocrine therapy between January 2012 and September 2020. Implantation is defined as the presence of tumor cells within a biopsy scar between the tumor and the skin, as reported in postoperative pathological reports. The clinicopathological characteristics of these cases resulting in implantation were compared with those of non-implantation cases, and their risk factors were evaluated using multivariate analysis.

**Results:** Implantations were observed in 58 (1.32%) eligible cases. The average age was 54.8 years; 49 patients underwent CNB and 9 underwent VAB. The implantation group had more ER-positive tumors close to the nipple (E area) and invasive micropapillary carcinomas than the non-implantation group. In multivariate analysis, ER-positive tumors close to the nipple (E area) were identified as risk factors for implantation.

**Conclusion(s):** The number of cases with implantation within a biopsy scar was limited. We found that cases with implantations are significantly likely to have ER-positive tumors close to the nipple (E area) and invasive micropapillary breast carcinomas. It is worthwhile to include biopsy scars in excision specimens and skin incisions in the cases of having these characteristics in order to prevent IBTR.

**Conflict of Interest:** No significant relationships.

**P111**

**Comparing MammaPrint and BluePrint results between core needle biopsy and surgical resection breast cancer specimens**

M. Kleijn1, J. McKelley2, J. Wei2, B. Hoxeng3, A. Menicucci2, S. Wang2, T. van Dalen1, H. Horlings3, W. Audeh3, 2. *Medical and Clinical Affairs, Agenda, N.V. Amsterdam, Netherlands; 3Medical and Clinical Affairs, Agenda Inc., Irvine, United States; 2Agenda Laboratory Services, Agenda Inc., Irvine, United States; 2Department of Surgery, Diakonessenhuis Utrecht, Utrecht, Netherlands; 2Netherlands Cancer Institute, Amsterdam, Netherlands

**Goals:** The COVID-19 pandemic continues to strain healthcare systems globally. The ESMO COVID-19 adapted recommendations 1 advocate for the use of pre-operative/neoadjuvant endocrine therapy as a strategy to defer surgery by 6–12 months in clinical stage I-II breast cancers to prioritize resources for patients that require urgent care. Accurate risk assessment is an integral component of this prioritization process. Adjuvant studies such as MINDACT showed that up to 46% of clinically high risk tumors were classified as genomic Low Risk with MammaPrint, and still have excellent outcomes at 8-yrs with endocrine therapy alone, highlighting the potential for overtreatment if using clinical-risk alone. Here, gene expression results with MammaPrint (MP) and BluePrint (BP) were
Results: Turnaround time (TAT) and success rate were also assessed between CNB and SR samples. Comparative logistics metrics (avg. turnaround time [TAT] and success rate) were also assessed between these specimen types.

10% of samples were CNB and 90% were SR (Table 1). BP Basal, Luminal and HER2-type distributions were 2%, 97%, and 1% respectively for CNB samples and 1%, 98.6%, and 0.4% respectively for SR samples. Within Luminal-type tumors (majority of the samples), the frequency of UL, LR, and HR results were 14%, 61%, and 39% for CNB, and 13%, 58%, and 42% for SR, respectively. Overall, MP Index distribution patterns were essentially identical between CNB and SR specimens. Comparative "logistics metrics" (avg. turnaround time [TAT] and success rate) were also assessed between these specimen types.

Definitions: Turnaround Time (TAT) is calculated from the time a specimen is received at the laboratory to the time a result is available. Success % excludes test failures due to insufficient RNA yield % and sub-optimal RNA quality, and evaluates the total number of specimens that have met the pre-requisite 30% minimum invasive tumor requirement that have a valid result.

Conclusion(s): The frequency of each MP risk group as well as the distribution pattern of MP Index were essentially identical between CNB and SR samples, indicating comparable performance regardless of specimen type. With timely TAT and no meaningful difference in distribution pattern of MP Index were essentially identical between CNB and SR samples. Comparative logistics metrics (avg. turnaround time [TAT] and success rate) were also assessed between these specimen types.

Conflict of Interest: Employee of Agendia, equity/stock ownership interest.

Drug Development and Evaluation:

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MammaPrint, BluePrint, and full-genome data linked with clinical data to evaluate new gene expression profiles (FLEX): a real-world dataset and investigator-initiated protocols in ESBC

J.A. Crozier1, L. Blumencranz2, M. Kleijn3, H. Kling2, A. Truitt2, D. Pronin5, C. Finn2, W. Audeh6, B. van der Baan1

1FLEX Investigators Group, 2Baptist MD Anderson Cancer Center, Jacksonville, United States; 3Agenda Medical Affairs, Irvine, United States; 4Agenda N.V., Amsterdam, Netherlands; 5FLEX, Investigators Group, United States

Goals: The ability of genomic signatures to stratify early stage breast cancers (ESBC) into clinically actionable molecular subtypes beyond anatomical staging is enhancing personalized management of ESBC. In order to accelerate the process of identifying new expression signatures and subsequent effective therapies, the FLEX Study was designed to aggregate a large, real-world dataset that may have practice changing implications directly relevant to patient care. The primary objective of FLEX is to create a large scale, population-based registry that links comprehensive clinical and full genome expression data to elucidate new prognostic and/or predictive gene associations with a minimum of 10,000 patients. A second objective is to enable additional study arms to be added at low incremental effort and cost by allowing for the addition of investigator-initiated substudies that may be added as appendices to the protocol of the baseline study.

Methods: The FLEX Study (NCT03053193) is a multicenter, prospect, observational trial for patients aged ≥18 years with histologically proven stage I-III breast cancer whose primary tumor is analyzed by the MammaPrint 70-gene signature, with or without BluePrint 80-gene molecular subtype and a clinically annotated full transcriptionome read-out is completed per consent. The FLEX infrastructure provides a common protocol foundation for investigators to submit their own concept proposal, and upon approval by Scientific Review Committees, interrogate clinical and genomic data in the FLEX database.

Results: Over 6,000 patients enrolled since April 2017 at >85 sites in the United States. Participants include physicians and patients in the community setting and eight National Cancer Institute-designated centers, ensuring inclusion of diverse populations, particularly patient subsets underrepresented in traditional clinical trials. To date, 59 investigator-initiated substudies have been submitted, of which 27 have been approved and are in progress. FLEX investigator-initiated substudies have resulted in 18 published abstracts at US scientific congresses.

Conclusion(s): The FLEX Study is expediting the discovery and development of novel genomic profiles, helping to bring precision oncology to the clinic and improve breast cancer management, particularly for patients underrepresented in breast cancer clinical trials. The future direction for FLEX is interrogation of short-term outcome data and enrolling the first qualified European and Global site participants in 2021.

Conflict of Interest: No significant relationships.

P113

Survival comparison of HER2 breast cancer patients according to HR status: analysis of a single Portuguese centre

G. Nogueira-Costa1, J. Gramaça1, I. Fernandes1, C. Trabulo1, J. Gonçalves1, I. Pina1

1Medical Oncology, Centro Hospitalar Barreiro-Montijo, Barreiro, Portugal

Goals: We aim to compare survival outcomes in Human Epidermal Growth Factor Receptor 2 HER2 positive (pos) patients (pts) according to Hormonal Receptor HR status treated at a single Portuguese centre.

Methods: Retrospective analysis of HER2 positive (pos) invasive early breast cancer (EBC) pts treated with trastuzumab (Tz) in neoadjuvant (NAdj) and/or adjuvant (Adj) setting at a Portuguese centre over 5 years (2014–2018), with survival outcomes comparison between pts