rates were 34.3% in patients without RT, 0% in patients with local RT and 1.2% in patients with locoregional RT, p < 0.0001.

Conclusions: AR and SR are currently rare events and often detected concomitantly with distant metastases. SRs are associated with aggressive disease and poor survival. Regional RT significantly reduced regional recurrences in N2 patients but not in N1 patients.

5042   **POSTER**

Clinical Implications of Palliative Surgery in Patients With Suspicious Versus Proven Metastatic Breast Cancer Under Current Staging System

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Background: According to staging guidelines, patients are considered to have stage IV breast cancer if they have clinically or radiographically detectable metastases, with or without biopsy. However, this definition of distant metastasis could make the population of metastatic breast cancer heterogeneous. Though recent studies suggest that surgical removal of the primary tumour improved the prognosis of patients presenting with stage IV disease, these findings can be overestimated owing heterogeneity. Therefore, we classified stage IV breast cancer into suspicious metastatic breast cancer (SMBC) and metastatic breast cancer (MBC), and assessed the impact of palliative surgery on survival.

Methods: Among 2998 breast cancer patients treated at Seoul National University Hospital between January 2000 and February 2009, we consecutively enrolled 201 patients with newly diagnosed stage IV breast cancer. The patients were classified into SMBC and MBC groups; if they had detectable metastasis, which was confirmed either by biopsy, involvement in multiple organs or involvement in a single organ as shown by at least two different imaging modalities (CT, MRI and PET), they were considered to have MBC; all others were classified as SMBC group. The impact of palliative surgery on overall survival (OS) was evaluated by multivariate analysis.

Results: Among 201 patients, 66 were classified into the SMBC group and 135 into the MBC group. 65 of 66 patients (98%) in the SMBC group and 65 of 135 patients (48%) in the MBC group received palliative surgery during their treatment period. With a median follow-up time of 43 months, median OS for the SMBC group who received surgery was 7.0 years; median OS for the MBC group receiving surgery was 3.5 years and for the MBC group not receiving surgery 2.1 years (p < 0.001). The 5-year OS rates were 75.5%, 41.8%, and 16.2% respectively. Among the MBC group, palliative surgery appeared to be an independent prognostic factor for OS, adjusting for age, co-morbidity, hormonal receptor, HER-2 status, number of metastatic lesions and organs, use of systemic therapy (chemotherapy, hormonal therapy) and use of radiation therapy in multivariate Cox regression analysis (HR = 0.38; 95% CI 0.23–0.65).

Conclusion: The significant difference of OS in patients receiving surgery between SMBC and MBC group suggests that the current category of stage IV breast cancer includes a heterogeneous population. Interestingly, we also found that primary tumour resection in patients with MBC was associated with improved OS. Therefore, a more precise definition of stage IV breast cancer is necessary to define the population who can benefit from palliative surgery. A well-designed prospective study is necessary to assess the prognostic value of palliative surgery.

5043   **POSTER**

Positron Emission Tomography With Computed Tomography Scanning as a Predictor of Pathological Complete Response After Neoadjuvant Chemotherapy

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Background: To determine accuracy of preoperative positron emission tomography (PET) to detect residual disease after neoadjuvant treatment.

Material and Methods: Population included 33 patients after neoadjuvant treatment for local advanced breast cancer with axillary metastasis at time of diagnosis. Mammography, sonography, magnetic resonance (MRI), positron emission tomography (PET-CT) were performed. PET-CT considerations: Cuts: Coronal, sagital, transverse, Correction of atenuation: TAC 90 kV 165 mA, Radiotracer: 18F, FDG (Fluoro-desoxi-glucose), Dose:

7.81 mCi. Comparison between mammographic, sonographic, MRI and PET-CT findings and correlation with gold-standard (pathological report).

Results:

- Correlation with tumour size after neoadjuvant treatment: The most accurate tool for tumour assessment was PET-CT (p=n.s.).
- Percentage of unnecessary mastectomies (no residual tumour in pathological report in mastectomy specimen after chemotherapy) that could be avoided due to PET-CT= 24% (p < 0.05).
- Capability of PET-CT to predict tumour vitality: Tumour vitality was detected in 21 cases (95.4%).
- Prediction of tumour complete response to chemotherapy: Mammography: 20%, sonography: 60%, RMI in 40% and PET-CT in 84% (p < 0.05).

Conclusions:

- Tumour size: PET-CT alone can reach equal results as a combination of mamography, sonography and magnetic resonance.
- Tumour viability: PET-CT is the most reliable tool to predict tumour viability after chemotherapy.
- Pathological complete response: PET-CT predicts complete histological response in 80% of patients, better than other studies.

5044   **POSTER**

A Simple Risk Score to Predict the Presence of NSN Metastases in Breast Cancer Patients With a Positive Sentinel Node

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Background: Completion axillary lymph node dissection (ALND) remains the standard of care for patients with a positive sentinel lymph node (SLN). However, in 40−60% of patients the sentinel node is the only positive node. The aim was to develop a simple risk score to identify the patient's individual risk for non-sentinel node (NSN) metastases.

Materials and Methods: The risk score was developed on data of 182 breast cancer patients from one hospital, who underwent successful SLN biopsy and a completion axillary lymph node dissection, and was based on the predictive factors of NSN metastases, identified in a previous meta analysis. The risk score, consisting of pathological tumour size ($\leqslant$20 mm/ >20 mm), lymphovascular invasion (yes/ no), extracapsular extension (yes/ no), size of the SLN metastases ($\leqslant$2 mm/ >2 mm) and number of positive SLNs (1/ >1) was subsequently validated on an external population from another hospital (n = 180). A receiver operating characteristic (ROC) curve was drawn and the area under the curve was calculated to assess the discriminative ability of the nomogram. A calibration plot was drawn showing the actual versus the mean predicted probabilities for each interval.

Results: The area under the ROC curve was 0.78 (range 0.71- 0.85) in the original population and 0.78 (range 0.70–0.85) in the validation population. The risk score accurately predicted the low risk groups (<40%).

Conclusion: A simple risk score was successfully developed integrating just 5 clinicopathological variables to provide an individualized risk estimate of the likelihood of NSN metastases in breast cancer patients with a positive sentinel node. This risk score may assist in individual decision making regarding axillary lymph node dissection in sentinel node positive patients.

5045   **POSTER**

Outcomes of HER2+ Metastatic Breast Cancer (MBC) Patients (PTS) Treated With Continuous Inhibition of HER2 Activity: a Single Institution Study

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Background: Anti-HER2 therapies are effective in HER2+ breast cancer; even if resistance occurs, continued HER2 inhibition is required for antitumour effect. There are no definitive data on the clinical benefit of continued trastuzumab (T) beyond progression in MBC and the optimal duration of T in pts with long-term control of disease. This study explores outcomes of MBC pts treated with T in multiple sequential lines.

Methods: From 2001 to 2009 we evaluated OS and cardiac toxicity in 50 pts with HER2+ (ASCO/CAP criteria) MBC who received T-based therapy for $\geqslant$ 12 months. OS was measured from the beginning of T-based CT to the last follow up visit or death. Cardiac event was any decline in LVEF by >10% from baseline or drop to <50%, III/IV NYHA CHF, new onset angina myocardial infarction, significant arrhytmias or sudden cardiac death.