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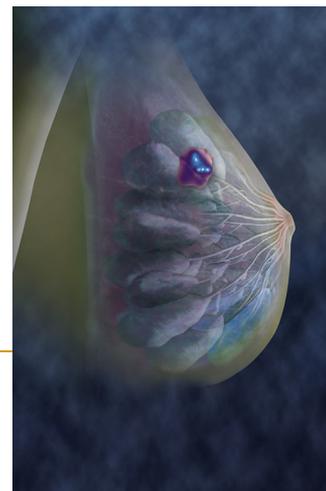


Illustration by Erin Moore

Reviews

- 383 **Diagnostic Clinical Trials in Breast Cancer Brain Metastases: Barriers and Innovations**
Jawad Fares, Deepak Kanojia, Aida Rashidi, Atique U. Ahmed, Irina V. Balyasnikova, Maciej S. Lesniak
- 392 **Cyclin-Dependent Kinase 4/6 Inhibitors in Neoadjuvant Endocrine Therapy of Hormone Receptor-Positive Breast Cancer**
Lorenzo Rossi, Amelia McCartney, Emanuela Risi, Irene De Santo, Ilenia Migliaccio, Luca Malorni, Laura Biganzoli, Angelo Di Leo

Original Studies

- 399 **Ribociclib Plus Trastuzumab in Advanced HER2-Positive Breast Cancer: Results of a Phase 1b/2 Trial**
Shom Goel, Sonia Pernas, Zhenying Tan-Wasielewski, William T. Barry, Aditya Bardia, Rebecca Rees, Chelsea Andrews, Rie Kawabori Tahara, Lorenzo Trippa, Erica L. Mayer, Eric P. Winer, Laura M. Spring, Sara M. Tolaney
- Preclinical studies have demonstrated that cyclin-dependent kinase 4 and 6 (CDK4/6) inhibitors can resensitize HER2-positive breast cancers to anti-HER2 therapies. We conducted a phase 1b/2 study of ribociclib (400 mg per day) plus trastuzumab in heavily pretreated patients with advanced HER2-positive disease. Continuous low-dose ribociclib plus trastuzumab was safe, but only 1 of 12 patients experienced stable disease. These findings suggest that further study of CDK4/6 inhibitor/anti-HER2 combinations should focus on a less pretreated population.
- 405 **Symptoms Predictive of Overall Quality of Life Using the Edmonton Symptom Assessment Scale in Breast Cancer Patients Receiving Radiotherapy**
Selina Chow, Bo Angela Wan, William Pidduck, Liying Zhang, Carlo DeAngelis, Stephanie Chan, Caitlin Yee, Leah Drost, Eric Leung, Philomena Sousa, Donna Lewis, Henry Lam, Ronald Chow, Michael Lock, Edward Chow
- Different symptoms have varying impact on quality of life (QOL). We determined that the extent of 9 symptoms using the Edmonton Symptom Assessment Scale from 1224 breast cancer patients were significantly associated with overall QOL before, at the end of, and after adjuvant radiotherapy. Pain, tiredness, and anxiety correlated with overall QOL at all time points; these symptoms should be screened and managed early to improve overall well-being.

- 411 Effect of Exercise on Taxane Chemotherapy–Induced Peripheral Neuropathy in Women With Breast Cancer: A Randomized Controlled Trial**
Kelcey A. Bland, Amy A. Kirkham, Joshua Bovard, Tamara Shenkier, David Zucker, Donald C. McKenzie, Margot K. Davis, Karen A. Gelmon, Kristin L. Campbell
Chemotherapy-induced peripheral neuropathy (CIPN) is a dose-limiting adverse effect of taxanes used to treat breast cancer. In this proof-of-concept trial, 27 breast cancer patients were randomized to exercise during versus after taxane chemotherapy to explore the effect on CIPN and taxane treatment adherence. Our findings suggest exercise may mediate patient-reported CIPN during taxane chemotherapy, but not by the end of chemotherapy, and potentially help patients better tolerate their taxane treatment.
- 423 Oncoplastic Breast Surgery Compared to Conventional Breast-Conserving Surgery With Regard to Oncologic Outcome**
Michael Rose, Henry Svensson, Jürgen Handler, Ute Hoyer, Anita Ringberg, Jonas Manjer
The oncologic outcome of oncoplastic breast surgery (OBS; 197 patients) was compared to conventional breast-conserving surgery (BCS; 1399 patients) with regard to primary radical excision, time to adjuvant treatment, disease-free survival, and overall survival. There was a lower risk for nonradical primary tumor excision in patients undergoing OBS versus conventional BCS. No other statistically significant differences were found. These results indicate that OBS is a safe procedure.
- 433 Frequency of Immune Cell Subtypes in Peripheral Blood Correlates With Outcome for Patients With Metastatic Breast Cancer Treated With High-Dose Chemotherapy**
Robert M. Lafrenie, Lisa Speigl, Carly A. Buckner, Graham Pawelec, Michael S. Conlon, Christopher Shipp
The frequencies of circulating myeloid and T-cell populations were correlated with clinical outcome for 88 patients with metastatic breast cancer treated with high-dose chemotherapy. The ability to predict outcome depended on the chemotherapy regimen. The frequency of monocytes indicated outcome for patients treated with cyclophosphamide-based chemotherapy, while the frequency of T cells indicated outcome for patients treated with paclitaxel-based chemotherapy.
- 443 Fitbit Usage in Patients With Breast Cancer Undergoing Chemotherapy**
Nickolas Dreher, Edward Kenji Haderl, Sheri J. Hartman, Emily C. Wong, Irene Acerbi, Hope S. Rugo, Melanie Catherine Majure, Amy Jo Chien, Laura J. Esserman, Michelle E. Melisko
Fitbits may be useful in tracking changes in physical activity during chemotherapy. Sixty-five patients with breast cancer were given Fitbits at the start of chemotherapy, but adherence to wearing the Fitbit was low, with mean number of valid days across the 9-month study period of 44.5%. Interventions to increase wear are likely necessary in the active treatment setting.
- 450 TPX2 as a Novel Prognostic Indicator and Promising Therapeutic Target in Triple-negative Breast Cancer**
Yueqiang Jiang, Yan Liu, Xiaolong Tan, Shiyin Yu, Jian Luo
The relationship between targeting protein for xenopus kinesin-like protein 2 (TPX2) expression and triple negative breast cancer (TNBC) has not yet been studied. Herein, patients with confirmed TNBC are evaluated by immunohistochemical staining of TPX2. Our study reveals that elevated TPX2 protein level is significantly associated with worse outcomes, including progression-free and overall survival, in patients with TNBC. In conclusion, we demonstrate that TPX2 could be a novel prognostic marker of progression-free and overall survival in TNBC.
- 456 Mammography Coverage and Tumor Stage in the Opportunistic Screening Context**
Marcos Benini Magario, Omero Benedito Poli-Neto, Daniel Guimarães Tiezzi, Helio Humberto Angotti Carrara, Jurandyr Moreira de Andrade, Francisco José Candido dos Reis
We assessed the effect of mammography screening in the context of opportunistic screening. There was an increase in screening coverage. The proportion of early stages increased during the same period.

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e669 T1-2NOMO Triple-Negative Breast Cancer Treated With Breast-Conserving Therapy Has Better Survival Compared to Mastectomy: A SEER Population-Based Retrospective Analysis

Huan Li, Yajuan Chen, Xin Wang, Lin Tang, Xiaoxiang Guan

We compared the survival outcomes of breast-conserving therapy (BCT) and mastectomy in patients with T1-2NOMO triple-negative breast cancer (TNBC). An analysis of 14,910 patients demonstrated better overall survival and cause-specific survival in patients with BCT, suggesting that BCT could be an appropriate option for T1-2NOMO TNBC. Further prospective studies are needed to confirm these conclusions.

e683 Efficacy of Neoadjuvant Endocrine Therapy Versus Neoadjuvant Chemotherapy in ER-positive Breast Cancer: Results From a Prospective Institutional Database

Nathalie LeVasseur, Kaylie-Anne Willemsma, Huaqi Li, Lovedeep Gondara, Walter C. Yip, Caroline Illmann, Stephen K. Chia, Christine Simmons

Data comparing the efficacy of neoadjuvant endocrine therapy with neoadjuvant chemotherapy are scarce. This retrospective analysis compared the efficacy of endocrine therapy with chemotherapy to downstage tumors in a matched cohort analysis of 176 patients. Down-staging of the primary tumor was achieved in 39% with chemotherapy and 22% with endocrine therapy ($P = .032$). Pathologic complete response was achieved in 2% of all cases. This study highlights the need to develop and validate biomarkers that can discern differences in biology and better predict responses to preoperative treatment for patients with estrogen receptor-positive breast cancer.

e690 Effectiveness of Added Targeted Therapies to Neoadjuvant Chemotherapy for Breast Cancer: A Systematic Review and Meta-analysis

Mona Pathak, Sada Nand Dwivedi, S.V.S. Deo, Bhaskar Thakur, Vishnubhatla Sreenivas, G.K. Rath

e701 First-Line Treatment for Endocrine-Sensitive Bone-Only Metastatic Breast Cancer: Systematic Review and Meta-analysis

Angela Toss, Marta Venturelli, Isabella Sperduti, Eleonora Molinaro, Chrystel Isca, Elena Barbieri, Federico Piacentini, Claudia Omarini, Laura Cortesi, Stefano Cascinu, Luca Moschetti

e717 Impact of NCI Socioeconomic Index on the Outcomes of Nonmetastatic Breast Cancer Patients: Analysis of SEER Census Tract—Level Socioeconomic Database

Omar Abdel-Rahman

The census tract—level socioeconomic status index is a composite score integrating 7 parameters. Lower socioeconomic status index is associated with worse breast cancer-specific survival. Further efforts need to be directed to improving breast cancer outcomes among women with socioeconomically vulnerable attributes.

e723 Development of Phase-Specific Breast Cancer Survivorship Care Plans

Lauren Boehm, Tracey Weisberg, Nadine Linendoll, A. Circe Damon, John K. Erban, Susan K. Parsons

Survivorship care plans (SCPs) have the potential to be powerful tools in providing individualized, comprehensive survivorship care over time, particularly if these documents are used in a dynamic fashion and updated throughout the survivorship course. We propose the addition of the phase-specific SCP at key care junctures to capture time-specific risks and updates, as well as to prepare for transitions of care. We detail the development and integration of the phase-specific SCP into the electronic medical record and clinical work flow at two, diverse practice settings.

e731 The Safety of Local Hormonal Treatment for Vulvovaginal Atrophy in Women With Estrogen Receptor-positive Breast Cancer Who Are on Adjuvant Aromatase Inhibitor Therapy: Meta-analysis

R.T. Pavlović, S.M. Janković, J.R. Milovanović, S.M. Stefanović, M.M. Folić, O.Z. Milovanović, C. Mamillapalli, M.N. Milosavljević

e741 Does Tumor Size Predict Response to Neoadjuvant Chemotherapy in the Modern Era of Biologically Driven Treatment? A Nationwide Study of US Breast Cancer Patients

Devon Livingston-Rosanoff, Jessica Schumacher, Kara Vande Walle, Trista Stankowski-Drengler, Caprice C. Greenberg, Heather Neuman, Lee G. Wilke

The effect of tumor size on response to neoadjuvant chemotherapy in patients with stage I to III breast cancer remains an open question. In this national study, tumor size was shown to be an independent predictor of complete pathologic response in patients with invasive breast cancer. However, cancer biology has a greater effect than tumor size.

e748 Surgeon-led Intraoperative Ultrasound Localization for Nonpalpable Breast Cancers: Results of 5 Years of Practice

Adam D. Gerrard, Anu Shrotri

Non-palpable breast cancers require marking prior to breast conserving surgery. We report 5 years of data where the lesions are localized by the surgeon with ultrasound intraoperatively. In 95 patients, the cancer was identified 100% of the time, and the positive margin rate was comparable. The use of the technique both has benefits to the patient and reduces reliance on the radiology department.

e753 Prediction of Residual Malignancy After Excisional Biopsy for Breast Cancer With Suspicious Microcalcifications: Comparison of Mammography and Magnetic Resonance Imaging

Gyeongmin Park, Kyoungkyg Bae, Il-Yeong Hwang, Jin Sung Kim, Woon Jung Kwon, Minseo Bang

The ability of mammography and magnetic resonance imaging (MRI) to predict residual malignancy after excisional biopsy for microcalcifications and whether background parenchymal enhancement (BPE) on MRI influences diagnostic performance was assessed in 51 patients. MRI was more accurate than mammography; however, BPE decreased the diagnostic performance of MRI. Patients with breast cancer with moderate or marked BPE require careful assessment.